

**Headteachers’ and chairs of governors’ perspectives of adolescent obesity and its prevention in English secondary school settings:**

**A mixed methods study**

by

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**Abstract**

**Introduction**

Secondary schools are an important setting for the prevention of obesity during the critical age of adolescence. National guidance in the United Kingdom proposes a clear role for headteachers and chairs of governors in delivering school-based preventative action. Despite this, their views are underrepresented in the existing evidence base. The aim of this study therefore was to explore headteachers’ and chairs of governors’ perspectives regarding adolescent obesity and its prevention in English secondary school settings.

**Methods**

This study utilised a mixed methods exploratory sequential design and was informed by the completion of a systematic review and qualitative synthesis. In the qualitative phase, semi-structured interviews were conducted (n = 22) and transcripts were analysed using thematic analysis. Based on the resultant themes and sub-themes, a descriptive online cross-sectional survey was developed for use in the quantitative phase. Descriptive and inferential statistics were employed to analyse the survey responses obtained (n=127).

**Results**

Headteachers and chairs of governors viewed unhealthy dietary habits and sedentary behaviour as a more significant problem than obesity in adolescence. Obesity was understood to be complex and multi-causal, although primary responsibility for its prevention was attributed to parents. Despite not an explicit school priority, the role of secondary schools in obesity prevention was supported given the acknowledged reciprocal relationship between health and educational outcomes. However various internal and external barriers were identified, which strongly influenced participants’ desire and ability to deliver school-based preventative action.

**Conclusion**

Secondary schools may be well positioned to influence adolescent lifestyle behaviours and weight status. Nevertheless public health policy makers and professionals need to understand the unique challenges schools face when contributing to the obesity prevention agenda. To maximise the effectiveness of school-based prevention, schools require additional support and resources. Furthermore public health action is required to address systematically the extensive social and environmental factors influencing adolescent obesity.

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**Abbreviations**

BMI – Body Mass Index

CASP – Critical Appraisal Skills Programme

CG – Chair of governors

DfE – Department for Education

DoH – Department of Health

GCSE – General Certificate of Secondary Education

HPS – Health Promoting Schools

HSE – Health Survey for England

HT – Headteacher

MPH – Master of Public Health

NCMP – National Child Measurement Programme

NHS – National Health Service

NICE – National Institute of Health and Care Excellence

OFSTED Office for Standards in Education

PhD – Doctor of Philosphy

PHE – Public Health England

PSHE – Personal, Social, Health and Economic education

SEM – Socio-ecological model

SPSS – Statistical Package for Social Sciences

UK – United Kingdom

USA – United States of America

WHO – World Health Organization

WOF – World Obesity Federation

**Framework of the PhD**

An overarching research question guided the entire PhD and three distinct research aims were established to all address the question posed. The first two aims reflected the necessity to undertake empirical research, both qualitative and quantitative, in a sequential and integrated manner. The third aim relates to the requirement for a systematic review and qualitative synthesis to be conducted, in order to inform the research design, data collection methods and the resulting discussion chapter within the thesis.

**Overarching research question**

What are headteachers’ and chairs of governors’ perspectives on adolescent obesity and its prevention in English secondary school settings?

**Research aim 1**

Explore and understand in-depth headteachers’ and chairs of governors’ views and experiences of adolescent obesity and its prevention in English secondary school settings

**Core qualitative phase**

Semi-structured interviews

Analysed using thematic analysis

**Supplementary quantitative phase**

Descriptive cross-sectional survey developed from qualitative findings

Analysed using descriptive and inferential statistics

**Research aim 2**

Conduct a descriptive cross-sectional survey, which identifies headteachers’ and chairs of governors’ opinions and attitudes towards adolescent obesity and its prevention in English secondary school settings.

**Systematic review and qualitative synthesis**

Results analysed using thematic synthesis

**Research aim 3**

Systematically identify and synthesise the research literature concerning ‘headteachers’ and chairs of governors’ perspectives on childhood or adolescent obesity and its prevention in school settings’.

**Chapter 1**

**Introduction**

This introductory chapter sets the scene for the doctoral study, by providing both a brief summary to the background and a rationale for this research.  An overview of the research purpose and the approach adopted to address the research question, aims and objectives is presented, in addition to a reflection regarding the potential empirical contribution of this postgraduate research project.  The researcher’s background is then discussed, before the chapter concludes with an overview of the thesis structure and content.

**1.1 Research background and rationale**

The escalating scale and severity of childhood and adolescent obesity both globally and nationally has presented a serious public health challenge for the 21st century (Lobstein and McPherson, 2016). In England, 25% of children aged four to five years and 33% of children aged ten to eleven years, are either overweight or obese (NHS Digital, 2016b). In the UK, whilst trends have indicated that the rate of increase is stabilising (Wabitsch et al., 2014), levels remain *“historically high”* and inequalities within childhood obesity prevalence continue to grow (Lobstein et al., 2015, p2510).

The causes of obesity during childhood, adolescence and adulthood are exceptionally complex and multifactorial, with genetic, behaviour and environmental factors, all influencing the resultant weight status of both individuals and populations (Butland and Jebb, 2007). Obesity is associated with an increased risk of morbidity and premature mortality (Ebbeling et al., 2002), in addition to presenting a substantial economic burden to society (Wang et al.,2011). Consequently, tackling the epidemic of obesity remains a critical national and international priority (Ng et al., 2014).

Prevention is perceived as the most effective solution to addressing obesity (Lobstein and McPherson, 2016) as attempting to manage or treat excess weight is challenging, costly and with varying long term effectiveness evidenced (Kothandan, 2014).  Put simplistically, preventing excess weight during childhood and adolescence, is achieved through influencing physical activity and nutrition behaviours, such as improving dietary intake and increasing exercise levels.

In addition to the family and community, schools both at primary and secondary level, are viewed as vital settings for positively addressing these key lifestyle behaviours (Waters and Silva-Sanigorski, 2011). Crucially, school based preventative action is deemed to be of benefit not only for child and adolescent health outcomes, but for educational outcomes related to academic attendance, engagement and performance (Duckworth and Seligman, 2005; Murray et al., 2007; Story et al., 2009; Stead and Neville, 2010; Gutman and Vorhaus, 2012). Schools are therefore argued to have a vested interest in contributing to the obesity prevention agenda (Langford and Bonell, 2015; Langford et al., 2017).

The important role of schools in preventing obesity, and the reciprocal relationship between health and educational outcomes has been raised at a policy level (Department of Health, 2008, 2011; Public Health England, 2014c; HM Government, 2016), supported by NICE guidelines (National Institute of Health and Care Excellence, 2006, 2012, 2015a, 2015b) and advocated for by leading academics in the field (Lobstein et al., 2015; Wang et al., 2015).

One of the critical factors for successful school based obesity prevention, identified across a number of systematic reviews, is the role and engagement of key school stakeholders (Waters and Silva-Sanigorski, 2011; Wang et al., 2015; Guerra et al., 2015). A vast array of literature has advocated that school staff, parents and wider community partners are crucial in influencing the outcomes of obesity preventative action in primary and secondary schools (Deschesnes et al., 2003; Doak and Visscher, 2006; Keshavarz and Nutbeam, 2010; Flaschberger, 2012; Hung et al., 2014).

Of significance, is the important role of school leaders (headteachers) and the school board management (governors) (Yager and Dea, 2005; Inchley et al., 2007; Swanton, 2008; Keshavarz and Nutbeam, 2010; Clarke et al., 2013; National Institute of Health and Care Excellence, 2015a). In England, and as determined by the Department for Education, headteachers are tasked with providing professional leadership of schools.  As a school’s most senior leader, headteachers are responsible for the operational management, organisation and control of a school including the creation of school policies and practices (Department for Education, 2015b). In contrast, the governing body, led by the chair of governors is the strategic decision-making hub of every school.  The governing body is expected to set the school’s strategic direction, oversee financial management and hold the headteacher to account on a school’s educational performance (Department for Education, 2014a).

Consequently, and as proposed by the National Institute of Health and Care Excellence (National Institute of Health and Care Excellence, 2015a), headteachers and chairs of governors are the key decision makers in schools and are deemed to be pivotal in influencing whether and how obesity prevention policies and interventions are implemented in their respective settings (Dixey and Wordley, 2010; Department for Education, 2014a, 2015b; National Institute of Health and Care Excellence, 2015a). Whilst a small evidence base has explored the views of primary school head teachers regarding childhood obesity and its prevention in English primary school settings (Howard-Drake and Halliday, 2015; Clarke et al., 2015), a significant gap in the literature exists related to headteachers at a secondary school level and governors overall.

Secondary schools provide education for adolescents aged 11 to 16 years, and this period of age still provides critical windows of opportunity to influence physical activity and dietary behaviour (Crone and Dahl, 2012). Evidence indicates that the proportion of adolescents who are obese generally increases as age increases (NHS Digital, 2016a), confirming the crucial importance of maintaining an obesity prevention focus throughout the secondary school period (Patton et al., 2011). Consequently, secondary schools have been proposed as the last chance to meaningfully influence the health behaviours of the majority of adolescents across the demographic spectrum (Hagell et al., 2015).

Despite this, it is still not known from the current published literature what the perspectives are of the two crucial secondary school stakeholders - headteachers and chairs of governors - who are explicitly referenced as being responsible for delivering school based obesity prevention (National Institute of Health and Care Excellence, 2015a).

The rationale therefore underpinning this research was that secondary school headteachers and chairs of governors have the overall decision making power regarding whether and how their setting engages with obesity related public health policy and practice. Consequently their perspectives on the public health issue of adolescent obesity and its prevention required exploring and understanding.

In order to guide this exploration and as presented in page ix (framework of the PhD), the purpose of this research study was articulated through the development of a defined research question, aims and objectives.

**1.2 Purpose of the research study**

**Overarching research question**

What are headteachers’ and chairs of governors’ perspectives on adolescent obesity and its prevention in English secondary school settings?

**Research aims**

Aim 1

Within an initial and core qualitative research phase , explore and understand in-depth headteachers’ and chairs of governors’ views and experiences of adolescent obesity and its prevention in English secondary school settings

Aim 2

Within a supplementary quantitative research phase and in order to determine the relevance of the qualitative findings outside of their original context - Conduct a descriptive cross-sectional survey, which identifies headteachers’ and chairs of governors’ opinions and attitudes towards adolescent obesity and its prevention in English secondary school settings.

Aim 3

Undertake a systematic review and qualitative synthesis to systematically identify and synthesise the research literature concerning ‘*headteachers’ and chairs of governors’ perspectives on childhood or adolescent obesity and its prevention in school settings’*.

**1.3 Approach of the research study**

In order to address the overarching research questions, aims and objectives, the study adopted a mixed methods approach, underpinned by a pragmatic philosophical worldview and employed an exploratory sequential design (Creswell and Clark, 2011).  In addition, a systematic review and qualitative synthesis was undertaken (chapter three), to inform the research design, develop data collection methods and crucially provide points of reflection for the thesis discussion chapter (chapter nine).

The mixed methods research design for obtaining empirical data was conducted in two distinct yet integrated phases. Starting with a core qualitative phase, the resultant findings formed the basis of a data collection tool for use in a supplementary quantitative phase.  This design was chosen as the paucity of relevant literature meant the priority was undertaking an in-depth qualitative exploration with the quantitative methods utilised to identify whether the first phase findings had relevance beyond their original context. Furthermore, given the lack of existing research it was neither possible nor appropriate to construct a quantitative instrument for use in a mono method study.

During the primary qualitative phase, semi-structured interviews guided by an interview schedule were undertaken with secondary school headteachers and chairs of governors to obtain study data. Results from the systematic review and qualitative synthesis assisted in shaping the content of the interview schedule. Following transcription of the audio recorded interviews, the findings obtained were thematically analysed.  Resultant themes and sub-themes formed the basis of developing the content of an online questionnaire for use in a quantitative survey.  The online questionnaire was distributed to a census of the population under study and the responses received were analysed using descriptive and inferential statistics.

**1.4 Potential contribution of this research study**

Results from conducting a systematic review and qualitative synthesis, highlighted that existing literature related to headteachers’ and chairs of governors’ perspectives on obesity is exceptionally limited, of varying quality and minimal direct relevance to the topic under study.  Consequently, this research is the first identified (on a national or international level), to focus exclusively on the perspectives of the overarching decision makers for obesity prevention within secondary school settings.

This study therefore provides a crucial opportunity to significantly advance the knowledge regarding whether, how and why headteachers and chairs of governors decide to undertake school-based preventative action for adolescent obesity.  This knowledge will be of interest to policy makers across education and health, and public health professionals who are currently engaged in the obesity prevention agenda within school settings.

Furthermore, the research presented in this thesis related to the topic under study is the first known to adopt a mixed methods approach and research design.  Consequently, this doctoral study is intended to make a methodological contribution to the field of school-based obesity prevention.  The perceived value and application of mixed methods research approaches is becoming increasingly recognised (O’Cathain et al., 2008). This research provides an example of how an exploratory sequential design can be effectively employed.

**1.5 The researcher**

The following section in this chapter reflexively addresses the motivation and interest in the research topic and the researcher’s professional and academic experiences that have led to the undertaking of this doctoral study.  Engaging in explicit self-awareness is argued to enhance the integrity and trustworthiness of research (Patton, 1990; Finlay, 2002b), and an important part of this reflexive process is being transparent about one’s own background and experiences (Davies and Dodd, 2002; Starks and Trinidad, 2007)

The researcher’s initial interest in the topic of childhood and adolescent obesity arose from a professional perspective.  At the time of applying for a faculty scholarship, the researcher was employed as a Public Health Specialist in a local authority within the Yorkshire and Humber region.  Within this role, the researcher had the strategic and commissioning responsibility for child, adolescent and adult obesity.  This required engagement with multi-agency partners and organisation, including schools.  For one piece of work, despite offering to provide resources to implement obesity prevention interventions, the researcher had experienced substantial professional resistance when attempting to engage with local headteachers.

During this time, the researcher was undertaking a Master of Public Health (MPH) degree at The University of Sheffield. Consequently, it was identified that there could be significant value in conducting a research project for the MPH dissertation, which focused on headteachers’ perspectives of obesity and the barriers and facilitators to preventing excess weight in school settings.   The resultant MPH research was published in the Journal of Public Health (Howard-Drake and Halliday, 2015), and this further ignited the researcher’s passion for continuing to address the paucity of relevant literature on this topic.

In the last year of the research, the researcher obtained a position as a Speciality Registrar in Public Health.  Whilst this changed the professional responsibilities from obesity to a wider range of public health topics, during the two days a week as a Registrar the researcher was still involved in obesity focused work.  For example as a peer-reviewer for the obesity chapter in a Joint Strategic Needs Assessment and delivering obesity focused training to GP trainees.

An additional personal factor also contributed to the researcher’s area of professional and academic interest.  Both the researcher’s parents were in secondary school leadership during the completion of the MPH and the doctoral study.  Frequent and extensive conversations with the researcher about their own and their peers experiences of engaging or not with the obesity prevention agenda, also enhanced the perceived value of conducting this study.  The intention was and has always been to address the lack of voice that headteachers and chairs of governors appear to have in the evidence base regarding obesity.

Whilst the above academic and professional experiences undoubtedly provides the researcher with a unique insight into the research topic under study, each could potentially have influenced the assumptions, perceptions and interpretations throughout the study (Finlay, 2002a, 2002b). It is important to be mindful especially given the exploratory nature of the research and based on the experiences above, that there were points within the research process where participants’ views or experiences conflicted with the researcher’s internal standpoint.  In addition, the researcher was constantly aware of the need to minimise researcher bias in order to accurately represent participants’ perspectives and meanings.  A fundamental aspect of this research process therefore was the researcher’s effective and continuous engagement with academic supervision.

In chapter 5.6 the researcher’s approach to reflexivity is provided in depth and Appendix M presents a detailed personal reflection of the researcher’s journey.

**1.6 Structure and organisation of the thesis**

This thesis is presented over ten distinct chapters.  The following provides a brief overview of the contents of each respective chapter:

*Chapter 1 Introduction*

Chapter one begins by providing a background to the research study and an explanation of the research study purpose and approach.  The perceived potential contribution of the research study is then discussed before an in-depth account of the researcher’s background is provided.  This first chapter concludes with a brief summary of the thesis structure and organisation.

*Chapter 2 General review of the literature and context of the study*

Chapter two commences with a comprehensive overview of adolescent obesity and school based obesity prevention.  This is inclusive of information regarding prevalence, terminology, measurement, causation and consequences of childhood and adolescent obesity.  Chapter two then details the UK and more specifically England’s response to addressing obesity during childhood and adolescence (with a priority focus on its prevention).  Following this, a discussion is presented related to the health promotion approaches in primary and secondary schools, which contribute to the obesity prevention agenda.  The final section of the chapter provides additional context to the study by briefly describing the education system during the time of data collection, including school demographics and leadership and governance procedures.

*Chapter 3 Systematic review and qualitative synthesis*

Following the comprehensive background to the topic under study, chapter three re-states the research question and justifies the decision to conduct a systematic review and qualitative synthesis of literature pertinent to this study.  A detailed overview of the methods employed is provided in the first section, including how the review scope was defined, the search strategy developed and what approach was undertaken to extract study data and assess research quality.  Lastly, the second section of the chapter reports the findings of conducting the thematic synthesis, discussing each of the resultant themes identified.

*Chapter 4 Research approach and design*

Chapter four begins with a description of the overarching approaches to the research and focuses on discussing two of the main components of a research approach, philosophical worldviews and research designs.  The chapter reflects on a variety of philosophical worldviews before justifying the researcher’s decision to adopt pragmatism as a guiding position.  Following this, research designs relevant to the chosen research approach (mixed methods) are discussed, with the researcher providing a robust argument for why the exploratory sequential design was deemed to be the most suitable and appropriate.  Chapter four concludes with information on the quality appraisal of mixed methods research studies.     
  
*Chapter 5 Research methodology of qualitative phase*

Chapter five commences by extensively detailing the methods utilised to conduct the primary and core qualitative phase.  This includes a comprehensive overview of all methods utilised for sampling and recruiting research participants, for collecting (semi-structured interviews) and analysing study data (thematic analysis).  The chapter concludes by discussing issues related to ethics and quality pertinent to the qualitative phase.  Throughout the chapter, the challenges encountered and any resultant limitations of the qualitative methods employed are referenced.   
 *Chapter 6 Findings from the qualitative phase*  
  
Chapter six begins by detailing the demographics of the research participants recruited into the qualitative phase. The chapter then moves on to present the analysis of the qualitative findings.  Within this chapter verbatim quotations are utilised to enhance and illuminate the narrative presented. At the end of each presented theme, a brief summary of the analysed findings is provided.  
  
*Chapter 7 Research methodology of quantitative phase*   
  
Similar to chapter five, this chapter extensively details the methods utilised to conduct the quantitative phase.  At the beginning of the chapter, the approach employed to develop a quantitative instrument (i.e. survey) from the qualitative findings are explicitly detailed.  Following this, a comprehensive overview of all methods utilised for sampling and recruiting research participants and for collecting and analysing study data is provided.  Finally, this chapter concludes by discussing issues related to ethics and quality of the quantitative phase.

*Chapter 8 Results of the quantitative phase*

Chapter eight describes the results from the national survey of headteachers and chairs of governors. It begins with an overview of the key findings and then progresses through the main elements of the survey itself. Content is based around descriptions of the analysed data (predominantly through frequency tables and associated text), in addition to results from conducting statistical tests.

*Chapter 9 Discussion*  
  
Chapter nine provides a discussion of the preceding two chapters of the qualitative and quantitative studies, beginning with a summary of the main findings obtained.  The chapter then provides an integrated discussion of the main findings from across both phases, with reference made to results identified from the systematic review and qualitative synthesis. In addition, broader existing literature and academic theory are discussed in relation to the findings obtained from both research phases.  An overarching critique of the research study is then detailed, where strengths and limitations are discussed.

*Chapter 10 Conclusion, recommendations and dissemination*  
Chapter 10 provides a brief conclusion, re-summarises the main findings and proposes how the study makes a unique and significant contribution to the evidence base.  Recommendations for practice and policy are discussed as well as possible areas of further research related to this study and its findings.  The approach utilised to disseminate the research and its findings are then detailed.

**Chapter 2**

**General review of the literature and study setting**

**2.1 Introduction**

This chapter seeks to achieve two key things (1): to present a comprehensive and critical account of contextual literature and evidence in relation to this topic, and (2) to support the justification that a focus upon secondary school headteachers’ and chairs of governors’ perspectives of adolescent obesity is appropriate. The chapter is split into two overarching sections, with the first providing a detailed overview of background literature related to the research topic and the second broadly describing the setting under study, i.e. secondary schools in England.

After briefly defining key terms (childhood, adolescence and obesity), section one summarises the global and national picture of obesity, and offers reflective discussions on the definitions, prevalence, causes and consequences of obesity.  This section then moves on to outlining national approaches utilised to address and prevent this public health problem. This includes the role of schools in promoting child and adolescent health and well-being and preventing obesity.  Concluding this section is a critical review of the effectiveness of school-based prevention interventions (with an emphasis on secondary schools), and how the study population, (i.e. headteachers and chairs of governors) play a crucial role within preventative action – thereby justifying the research focus.

The second shorter section of this chapter aims to provide an overarching description of the setting under study, namely secondary schools in England. This enables the research findings to be understood within the wider educational and policy context.  Therefore included in this section is demographic information at a national level regarding secondary school pupils, secondary schools and a brief explanation of leadership and governance arrangements within this setting.

2.1.1 Defining key terms

*Childhood and adolescence*

Given the frequent reference to the age periods of ‘childhood’ and ‘adolescence’ both throughout this chapter and the thesis, before presenting the general review of the literature, it was deemed important to define what this study understands by these terms.  In adopting the WHO definition, adolescence is proposed to occur between the ages of 10-19 years (inclusively) and represents a critical transition period between childhood (under 10 years) and adulthood (over 19 years - unless national law defines a person to be an adult at an earlier age), (World Health Organization, 2016a). Crucially for this study and the posed research question, this means that in relation to secondary school headteachers’ and chairs of governors’ perspectives on obesity, findings obtained will primarily although not exclusively relate to the period of adolescence (i.e. secondary school age is typically 11 to 16 years).  However, for completeness and given the significant overlap between the two age periods within obesity literature, this chapter will provide comprehensive and relevant information related to both childhood and adolescence.

*Obesity and lifestyle behaviours*

In an attempt to reduce any complexity and inconsistency in the language this study uses to describe obesity (Flegal and Ogden, 2011), the meanings underpinning the terminology employed will be articulated.  Throughout the thesis, two main overarching terms or phrases (‘obesity’ and ‘excess weight’) are utilised to reflect an excessive accumulation of body fat, which may put individuals at increasing risk of morbidity and premature mortality (Reilly et al., 2005). Both are intended to incorporate the often distinct categories of overweight and obesity (see section 2.3 for clinical definitions), unless explicitly stated otherwise.  The decision to adopt the terms ‘obesity’ and ‘excess weight’ to encompass all excess body fatness, i.e. reflect both overweight and obese, was in support of literature advocating for the use of terminology that reflects more clearly the seriousness of the condition and associated risks (Krebs et al., 2007; Young et al., 2008).

For the purpose of this research, when referring to ‘lifestyle behaviours’, collective reference is being made to two key behavioural factors deemed to influence an individual’s weight status, namely, dietary and physical activity habits (Butland and Jebb, 2007).

**Section one: General review of the literature**

**2.2 Globesity**

Over the last 30 years, the global prevalence of obesity in children, adolescents and adults has risen significantly (Wang and Lobstein, 2006; Finucane et al., 2011).  The term ‘Globesity’ (World Health Organization, 2003), conceptualises the scale of obesity as an international public health challenge, with (Gearhardt and Bragg, 2012) claiming *“no country in the world is unaffected”* (p.406).  The Global Burden of Disease Study (2013) evidenced excess weight has risen by 28% in adults and 47% in children since 1980 and up to 2013, with 2.1 billion people estimated to be overweight or obese across the world (Ng et al., 2014). Obesity is now reported to be associated with more deaths globally than underweight (World Health Organization, 2016b), causing nearly 3 million annual deaths worldwide (Finucane et al., 2011).

Whilst the rise in obesity prevalence across high-income countries appears to be plateauing (Kleinert and Horton, 2015), it's complex and intractable nature is reflected by the fact there isn’t a single nation that as yet has been able to reverse the epidemic (Roberto et al., 2015). Furthermore, despite the scarcity of robust data, there are indications that rather than slowing, obesity prevalence is in fact rapidly rising in low and middle-income countries (Lobstein et al., 2015).  For those countries, this presents a double burden of disease, where both communicable and non-communicable diseases present significant public health challenges (World Health Organization, 2016b).

The recognition by the World Health Organisation (WHO) of the scale and severity of obesity across both developed and developing countries, resulted in the adoption of the WHO’s Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013-2020 and associated monitoring framework (World Health Organization, 2013). Achieving the seemingly modest target proposed within this documentation, a zero increase in obesity in school-aged children, adolescents and adults between 2010-2025, is argued to be *“one of the largest challenges of all the global non-communicable disease targets”* (Roberto et al., 2015, p.2400). This is evidenced in the comparisons drawn between obesity and global climate change, by academics who aim to highlight the seriousness of the problem faced (Head, 2008; Swinburn et al., 2011).

Across the world, country level action to prevent obesity and therefore achieve the target of halting the rise in obesity has been isolated, patchy and slow (Kleinert and Horton, 2015; Roberto et al., 2015). Furthermore whilst many countries have significantly increased their localised preventative efforts and achieved a flattening of childhood obesity rate rises, there is a widening inequality in prevalence (Roberto et al., 2015). For example in developed countries, childhood obesity prevalence is highest and still increasing within children from lower socioeconomic groups (NHS Digital, 2016b; WHO, 2016).  Despite this, academics have proposed (Roberto et al., 2015), that given the many examples of national commitment and action to achieve the WHO’s Global Health target, there is a reason *“to feel optimistic about the future of obesity prevention”* (p.2041).  This is crucial, given that failure to succeed in halting and ultimately reversing obesity prevalence will arguably impact on the sustainable future of our species (Kleinert and Horton, 2015).

**2.3 Defining obesity**

The language and methods employed to define, frame and measure obesity are complex and contested (Ebbeling et al., 2002; Flegal and Ogden, 2011). Different reports and epidemiological studies utilise a variety of metrics, reference values and definitions when referring to both adult and childhood obesity (Cole et al., 2000; Chinn and Rona, 2001; Reilly, 2002, 2005). Despite the frequent categorisation of excess weight into overweight or obesity, adiposity is argued to be a continuous state, and identifying a specific point in which body fat becomes excessive and detrimental to health is challenging (Ogden et al., 2007). Indirect measures of relative weight are frequently utilised as a proxy for assessing body fat, primarily due to the challenges of undertaking direct measurements (Ogden et al., 2007). Body mass index (BMI) is the most commonly used indirect measure (Nguyen and El-Serag, 2010), representing an effort to derive an approximation of body fat by adjusting weight for height (weight in kilograms divided by the square of height in meters) (Gallagher and Visser, 1996). Originally devised for application with adults in the 18th century (Weigley, 2000), a substantial evidence base over the last two decades has supported the routine application of BMI as a reasonable and appropriate measure for estimating excess fat (Reilly and Wilson, 2002; Reilly, 2002).

The World Health Organization (WHO) developed an international classification of BMI, based on the relationship between increasing excess weight and elevated mortality; with overweight defined as 25 to 29.9 kg/m2 and obese as 30-39kg/m2 (World Health Organization, 2017). There does however, remain inconsistency in how both the distinct terms overweight and obesity are applied (de Silva-Sanigorski and Economos, 2010). The meaning of overweight and obesity vary between countries and across studies (Flegal and Ogden, 2010). Despite this, given the practical, non-invasive and inexpensive nature of measuring height and weight, BMI and WHO classifications of overweight and obesity have been widely adopted in both clinical and epidemiological settings (Ogden et al., 2007).

Whilst there is broad consensus of its potential value, the application of BMI, both at a population and individual level is not without its limitations.  Caution and criticism has been directed towards its failure to consider an individual’s actual body composition (lean and fat mass; muscle and bone ratios), and the distribution of adipose tissue (Saxena et al., 2004; Yajnik and Yudkin, 2004). In addition, the inability of BMI to account for the relationship between demographic factors and body fat (particularly related to age and ethnicity), have resulted in questions being raised about the suitability of BMI to universally assess obesity across whole populations (Jebb and Prentice, 2001; Klein, 2001).

Controversially, the international classification of BMI, and the widely accepted correlation between increasing BMI and elevated morbidity and mortality, has been rebuked by a body of academic research (Flegal et al., 2013). A systematic review of cohort studies identified a J-shape relationship between BMI and cardiovascular mortality, where a BMI of 25 to 29.9 units presented a lower risk than a normal range BMI (Romero-Corral et al., 2006). This was proposed to be due to BMI being unable to discriminate between fat and fat free mass.   In addition Flegal et al., (2013) proposed the existence of an ‘obesity paradox’, where being overweight (not obese), is associated with a longer life expectancy than being a healthy weight.  Whilst the methods utilised in this meta-analysis were widely criticised (Viña et al., 2013) the study provided a critical opportunity for academics to debate the generally held perceptions about BMI, obesity and health.

2.3.1 BMI in children and adolescence

BMI has more recently been developed for use in childhood and adolescence (Dietz and Bellizzi, 1999), although its application is more complicated than adults due to the need to compare to population norms and account for a child’s age and gender (Cole et al., 1995, 2000). Across the world, national reference charts are used to routinely monitor children’s growth (Rolland-Cachera and Cole, 1991; Cole et al., 1995; Kuczmarski and Ogden, 2000; Chinn and Rona, 2001; Cacciari and Milani, 2002; He et al., 2000). Defining overweight and obesity through selected percentiles in national reference charts is undertaken as a secondary purpose (Flegal and Ogden, 2011).  In the UK, the 1990 British growth reference chart was developed from a representative survey of 37,000 children, aged from birth to 23 years across England, Scotland and Wales (including data on weight, height, BMI and head circumference) (Cole et al., 1995).

The use of national reference charts for assessing excess weight in childhood and adolescence, requires BMI values in individual children to be converted to z-scores (the number of standard deviations from the mean BMI for the child’s age and sex), enabling comparison of BMI across age and sex (Flegal and Ogden, 2011). Secondly, percentile cut offs are established to define the point in which overweight and obesity are assessed.  UK national guidelines recommend for epidemiological purposes, the 85th and 95th percentiles are used as cut offs for overweight and obesity respectively, whereas in clinical practice the 91st and 98th percentiles (Public Health England, 2011a). The differences in cut offs, allows for high specificity in clinical practice and high sensitivity in epidemiological studies (Reilly, 2002, 2005).

Despite the routine use of national reference charts and BMI to monitor child growth and excess weight, it has been argued that there remains a lack of robust evidence linking the relationship between the defined cut off values for overweight and obesity in children and adolescents with later morbidity and mortality (Wells and Cole, 2002; de Silva-Sanigorski and Economos, 2010). An additional complication of utilising BMI in childhood and adolescence, is the suggestion that the comparative contributions of fat and fat free mass to BMI in children have altered over time (Wells and Cole, 2002; Wells and Coward, 2002).  If correct, this means that where BMI is utilised as an epidemiological measure for childhood and adolescence overweight and obesity, prevalence could be underestimated.

Although main data sources of childhood obesity prevalence in England are based on BMI definitions, trends assessed by waist circumference have also been explored.  Cross-sectional surveys from 1977 to 1997 of waist circumferences in British adolescents (11 to 16 year olds), identified that obesity assessed by waist circumference had increased at a higher percentage than that defined by BMI (McCarthy et al., 2003). With suggestions that identifying ‘central obesity’ in children could provide a more meaningful indication of health outcomes than BMI (Rodríguez-Rodríguez, 2011), current epidemiological approaches to monitoring childhood obesity could be failing to identify the true severity of the challenge posed (Freedman and Serdula, 1999).  In spite of this, the adoption of new methodologies to identify those children and adolescents with abdominal fat are currently beyond the scope of population level surveillance (World Health Organization, 2016c).

**2.4 Childhood and adolescent obesity prevalence**

Both internationally and nationally, childhood obesity prevalence since the 1980s has broadly followed the same trend as adult obesity, which is a significant upward increase (Figueroa-Muñoz et al., 2001; Lobstein et al., 2015). The World Obesity Federation (WOF) estimated in 2004, that globally 10% of children (5 to 17 years) are overweight or obese, equating to 155 million children, of which 30-45 million are obese (Lobstein et al., 2004).

Whilst the prevalence of childhood overweight and obesity remains alarmingly high, recent research has indicated that the rate of increase has begun to plateau in many developed countries across the world (Stamatakis et al., 2010; Lobstein et al., 2015).  It is too early to say though whether the stabilisation in prevalence will continue, or the shocking prediction will be realised that for example in the UK nine out of ten children could be overweight or obese by 2050 (Butland and Jebb, 2007).

Childhood and adolescent obesity prevalence is routinely measured and published through two main data sources, the Health Survey for England (HSE) and The National Child Measurement Programme (NCMP).  The HSE, an annual survey designed to measure health and health related behaviours in adults and children living in England, has recorded the height and weight of children aged 2 to 15 years since 1995 (NHS Digital, 2016a).  Whilst a nationally representative sample of high quality data, the, HSE is still relatively small in size and requires self-reported measurements. This fact, combined with an increasing governmental focus on tackling obesity (Butland and Jebb, 2007), saw the launch of the NCMP in the 2006/2007 academic year.  The NCMP undertakes yearly BMI assessments of approximately 94% of children aged 4 to 5 years and 10 to 11 years nationally within primarily state-maintained primary school settings (NHS Digital, 2016b). This approach has resulted in the NCMP becoming one of most robust data sets on childhood obesity prevalence in the world (Jebb et al., 2013).

Given that the NCMP only undertakes annual height and weight assessments of 4 to 5 and 10 to 11 year olds, a significant gap exists in tracking obesity prevalence in adolescence, i.e. above the age of 11 years old.  Over a third of adolescents leaving their last year of primary school are entering into secondary school either overweight or obese (NHS Digital, 2016b) and the HSE is currently the only source of prevalence estimates for adolescent excess weight after this period (11 to 15 years).  In general, results from the HSE indicate that the proportion of adolescents who are obese generally increases as age increases (NHS Digital, 2016a). This confirms the critical importance of maintaining an obesity prevention focus throughout the secondary school period (Patton et al., 2011).

The most recent estimates of childhood obesity prevalence in England are shown in table 2.1.

**Table 2.1** – Childhood and adolescent overweight and obesity prevalence for England in 2015/2016

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | ***Boys*** | | | ***Girls*** | | |
| ***Source of data*** | ***Age***  ***(years)*** | *%*  *overweight* | *%*  *obese* | *%*  *overweight or obese* | *%*  *Overweight* | *%*  *obese* | *% overweight or obese* |
| *HSE (2015)* | *2-15* | *14* | *16* | *30* | *14* | *15* | *29* |
| *NCMP (2015/2016)* | *4-5*  *10-11* | *13.1*  *14.3* | *9.6*  *21.7* | *22.7*  *36* | *12.6*  *14.3* | *9.0*  *17.9* | *21.6*  *32.3* |

(Source - NHS Digital, 2016a, 2016b)

The most recent NCMP report (NHS Digital, 2016b), reported that the prevalence of obesity had increased in both age groups since 2014/2015.  In addition, obesity prevalence was higher for boys than girls across both age groups. For those children living in the most deprived areas, prevalence was more than double that of those living in the least deprived.  The associations identified between gender, deprivation and obesity prevalence in NCMP data were echoed in the findings from the latest HSE report (NHS Digital, 2016a).

An individual’s physical activity and dietary habits are both deemed to be crucial behavioural factors contributing to the determination of weight status (World Health Organization, 2016c). NHS Digital publishes national results from two surveys (Active lifestyle Survey and National Diet and Nutrition Survey), which aim to assess the physical activity/sedentary behaviour and dietary habits of adults, children and adolescents.

In relation to physical activity, latest data indicates that excluding activities during school, only 22% of children (23% for boys and 20% girls) aged 5 to 15 years met the physical activity guidelines (60 minutes or more on all seven days). This percentage was evidenced as decreasing with age for both sexes (NHS Digital, 2017). Furthermore, over a fifth of 11 to 12 year olds and over a third of 13 to 15 year olds, were deemed to be sedentary during weekends (i.e. primarily sitting or lying down for six hours or more per day), (NHS Digital, 2017).

When reflecting upon dietary habits of children and adolescents, it is estimated that 8% of adolescents aged 11 to 18 years meet the recommended five portions of fruit and vegetables a day, with mean consumption reported to be 2.8 daily portions (Public Health England, 2016a). Furthermore, 11 to 18 year olds are deemed to exceed the recommendation that free sugars should provide no greater than 5% of total energy intake in adults and children over two years (Scientific Advisory Committee on Nutrition, 2015). Estimated to be over three times this recommendation (15.2%), the main sources of free sugar consumption in 11 to 18 year olds are ‘cereal and cereal products’, ‘non-alcoholic beverages’ and ‘sugar preserves and confectionery’ (NHS Digital, 2016a).

2.4.1 Childhood and adolescent obesity and inequalities

A person’s position within a social hierarchy, affects the conditions in which they are born, grow, live, work, and age (Marmot, 2010). In the UK and across the world, a social gradient of health is evidenced, where the lower an individual’s position within a society, the worse their health will be (Health, 2008; Public Health England, 2014a). A crucial consideration therefore, when examining childhood and adolescent obesity prevalence and the recent plateauing of rates, is to identify and understand the substantial inequalities that exist related to age, gender, socioeconomic status and ethnicity (Wang and Beydoun, 2007).

Particularly pronounced and extensively evidenced (Public Health England, 2014a; Lobstein et al., 2015; World Health Organization, 2016c), is the relationship between obesity prevalence, unhealthy lifestyle behaviours in childhood and adolescence and socio economic status.  Within the UK, obesity prevalence in children from the most deprived areas is double compared to children from the least deprived, with this ‘deprivation gap’ evidenced as increasing since 2007/2008 (NHS Digital, 2016b). In addition to the relationship between deprivation and obesity, national data indicates that a child or adolescent is at greater risk of experiencing obesity if they are older, a boy, are from a black and minority ethnic group or live in an urban area (NHS Digital, 2016b).

The trends however between childhood and adolescent obesity and inequalities are not straightforward and subject to much exploration and debate (Wardle et al., 2006; Stamatakis et al., 2010; Fraser et al., 2010).  It has been challenged for example whether higher prevalence of excess weight, evident in children and adolescents from lower socio-economic groups in both developed and developing countries, is entirely due to excesses of body weight or is indeed confounded by low height for age, i.e. increased stunting (Lobstein et al., 2015). Furthermore, the evidenced ethnic variations across excess weight prevalence are argued to be complicated by social economic status (Public Health England, 2011b). However, what is clear is that obesity does not affect all groups equally (Public Health England, 2016b). The intricacies in inequality within child and adolescent obesity prevalence, support the case that an individual’s life circumstances should be fully reflected upon, so that the actual underlying factors increasing a person’s risk of experiencing excess weight are understood and accounted for (Marmot, 2010).

In relation to the proposed study, increasing obesity prevalence during childhood and particularly during adolescence, coupled with the complex picture of inequalities means secondary level education becomes a vital setting for preventative action (Wang et al., 2015). Secondary schools are the only setting able to reach the majority of adolescents aged 11 to 16 years across the social spectrum, regardless of demographic variables (e.g. gender, socio-economic status, ethnicity), (Hagell et al., 2015).  Consequently, universal approaches to address obesity in schools and targeted school-based action for lower socio-economic groups, have both been advocated to reduce the gradient of inequalities in obesity (Bambra et al., 2015).

**2.5 Childhood obesity causation and consequences**

Identifying and exploring the aetiology of childhood and adolescent obesity, and the health, social and financial outcomes that result is crucial so that action to address it is both meaningful and effective (Wang et al., 2011)

2.5.1 Causation

On a simplistic level, an accumulation of excess fat can be attributed to a person’s small, but chronic daily energy imbalance (Maffeis, 2000; Murray and Battista, 2009; Gortmaker et al., 2011). Therefore any factor that increases energy intake or decreases energy expenditure will result in an elevated risk for obesity (Ebbeling et al., 2002).  *“Divergent beliefs exist about what drives and sustains obesity”* (Roberto et al., 2015, p.2401) and a substantial body of evidence has investigated an extensive range of physiological, behavioural and environmental factors, which are argued to have exposed the innate human susceptibility to weight gain (Lang and Rayner, 2007; Brug et al., 2010; World Health Organization, 2016c). Obesity causation is therefore understood to be both multi-factorial and exceptionally complex (Butland and Jebb, 2007).

Although arguments exist supporting the role of genetics in obesity causation (Barlow, 2007; Swinburn et al., 2011), the exponential rise in both the scale and severity of global obesity means a simple explanation of genetics can be largely disregarded due to the relative stability of the population gene pool (Barlow, 2007; Wang et al., 2011).  Given that genes therefore *“are not destiny”* for excess weight (Barlow, 2007, p.S166), the critical indicator for obesity is in fact an increasing obesogenic environment (Swinburn et al., 2011). This has been defined as the *“sum of the influences that the surroundings, opportunities or conditions of life have on promoting obesity in individuals and populations”* (Swinburn et al., 1999, p.564). Consequently, a useful analogy for reflecting on the causes of the obesity epidemic is that *“genetic background loads the gun, but the environment pulls the trigger”* (Bray, 2004, p.115).

In an attempt to conceptualise the complexity of the obesity causation, the UK Foresight Programme in 2007 presented the ‘obesity systems map’ (figure 2.1), a comprehensive visual representation of the variables deemed to influence an individual’s energy balance and resultant weight status (Butland and Jebb, 2007).

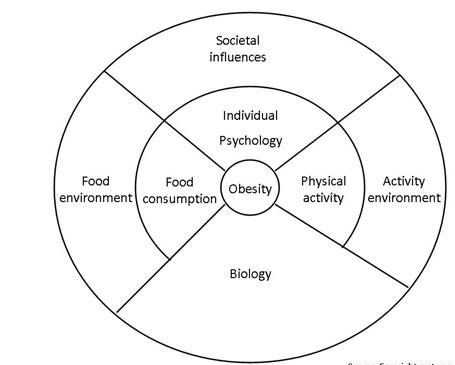


Figure 2.1 – Obesity Systems Map – adapted from the Foresight report (Butland and Jebb, 2007)

Despite obesity resulting from an individual’s energy intake exceeding energy expenditure (the core of the map), 108 interconnecting variables or factors across seven cross-cutting predominant themes, are presented within the obesity systems map, which influence and account for this energy imbalance.  By linking physiology (or biology), individual behaviours and environmental factors across the life course (Swinburn et al., 2011), the Foresight programme ambitiously defined the obesity system as *“all the relevant factors and their interdependencies that determine the condition of obesity for an individual or a group of people”* (Vandenbroek et al., 2007, p.1).

2.5.1.1 Physiology

In relation to physiology and central to obesity is the role of the homeostatic biological system, which is argued to be genetically determined and key to the regulation of energy balance and body weight (Butland and Jebb, 2007). Academics have proposed (Daniels et al., 2005; Barlow, 2007) that genes influence every aspect of human physiology, development and adaptation, with the ability to maintain energy balance no exception. Twin studies have evidenced a genetic risk of obesity (Maes et al., 1997) and specific genes related to obesity have been identified (Barlow, 2007; Swinburn et al., 2011).  Therefore variation in weight gain can be partially explained by an individual’s genetic susceptibility and predisposition to obesity (Cheung and Mao, 2012). A genetic predisposition to obesity is considered important, given that it determines the level of activity of basic physiological variables, which in turn directly influence *“energy balance, appetite control and nutrient partitioning”* (Vandenbroek et al., 2007, p.18).  Furthermore, other physiological and biological risk factors have been identified through the discovery of *“leptin, ghrelin, adiponectin, and other hormones”*, which are also understood to influence individual’s *“appetite, satiety, and fat distribution”* (Barlow, 2007, p.S166).

2.5.1.2 Individual behaviours

In addition to physiological factors, an individual’s dietary and physical activity behaviours play a critical role in influencing energy balance and resultant weight status (Butland and Jebb, 2007). In respect to energy balance, a vast array of observational studies have sought to investigate the relationship between modifiable individual dietary and physical activity behaviours and weight related outcomes, across an individual’s life course (National Institute of Health and Care Excellence, 2015b).  However the validity and reliability of these studies have at times been *“hampered by the lack of robust, objective measures of dietary and physical activity in large populations”* (Jebb et al., 2007, p.vii).

Despite varying in the strength of evidence and at times the presentation of conflicting results, research has identified positive associations between an increasing risk of obesity and the consumption of high sugar beverages (Malik et al., 2006), skipping breakfast (Szajewska and Ruszczyński, 2010), diets high in fat and sugar (Te Morenga et al., 2012), eating whilst watching television (Moreno and Rodriguez, 2007) and eating out (Davis et al., 2007). Furthermore, correlations have been observed between obesity and decreasing physical activity levels (Jebb et al., 2007; Hallal et al., 2012), increasing sedentary behaviour independent of physical activity (Thorp et al., 2011), participation in sedentary and technological recreation (Crespo et al., 2001; Eisenmann and Welk, 2004; Williden et al., 2006; Tremblay et al., 2011) and differing sleeping patterns (Patel and Hu, 2008; Lytle, 2009).

2.5.1.3 The environment

Whilst it is undoubtedly important to identify individual behavioural risk factors associated with obesity, it is crucial to understand what determines or influences their actual adoption and maintenance (Roberto et al., 2015). Rather than individual behaviours being merely a product of free will and personal choice, an increasing body of evidence has promoted the influence of the wider social and environmental context driving dietary consumption or habits and physical activity patterns or preferences (Jebb et al., 2007). As a result, in addition to the role of individual knowledge, beliefs, attitudes and psychological drive, the following factors (whilst not exhaustive) are argued to influence whether and how a person takes in and expends energy – changes to the built and urban environment (World Health Organization, 2012), healthy and unhealthy food availability, affordability and marketing (Lobstein and Dibb, 2005; Harris et al., 2009; Fraser et al., 2010; World Health Organization, 2016c), media (Jordan et al., 2008) and the increasing use of technology based products (Power and Schulkin, 2009).  These environmental factors are further confounded by socio-economic and ethnic disparities and vulnerabilities (World Health Organization Regional Office for Europe, 2014; Lobstein et al., 2015; World Health Organization, 2016c).

Consequently, and fundamental to the Foresight programme (Butland and Jebb, 2007), is understanding and framing obesity at a broad ecological or systems level where multiple spheres of influence were proposed as shaping behaviour across the life course and at an individual, social and cultural, organizational, community and policy level (Butland and Jebb, 2007; McLeroy et al., 1988; Sallis and Glanz, 2009; Finegood et al., 2010; Ulijaszek, 2015).

Whilst useful in conveying the systemic nature of the problem, concern has been raised that given the exceptional complexity of the obesity systems map *“its use would lead to despair and retreat from the problem”* (Finegood et al., 2010, p.S14). Furthermore, despite the increasing body of evidence highlighting the multi-level environmental influences on driving or moderating dietary and physical activity behaviours (Swinburn et al., 2011), some academics propose this attention is argued to detract from an individual’s own responsibility for maintaining a healthy weight (Brownell et al., 2010).

However academics have stated (Robert et al., 2015) that utilising simplistic dichotomies to frame obesity causes and solutions, i.e. individual versus environment causes, or personal versus societal responsibility, fails to take into account the complex interactions between them.  Furthermore, divisive discussions and debates about causation is suggested to be a distraction, which hinders progress and provides policy makers an excuse for inaction (Kleinert and Horton, 2015).

2.5.2 Childhood and adolescent obesity consequences

Excess weight and more specifically excess accumulation of body fat in children and adolescence, presents both an immediate and long term risk to physical, emotional and social health and well-being (Keating, 2011).  Consideration must be paid, not only to the negative consequences of obesity during childhood, but the fact that unless effectively addressed, even in early years (0 to 5 years) obesity strongly tracks into both adolescence and adulthood (Power et al., 1997; Singh and Mulder, 2008). Crucially, the tracking of obesity throughout a child’s life significantly increases the risk of elevated morbidity and premature mortality (Reilly and Kelly, 2011).  Of direct relevance for this study is evidence suggesting that if obesity becomes established during the period of adolescence, it is even less likely that a reversal to a healthy weight during adulthood will occur (Ebbeling et al., 2002; Singh and Mulder, 2008).  Patton et al., (2011) therefore argues that both the period and transition from adolescence to young adulthood is a crucial phase for the prevention of excess weight.

2.5.2.1 Physical health

Children and adolescents who are obese have an elevated risk of experiencing chronic health conditions (Reilly et al., 2003).  These include pre-diabetes and type 2 diabetes, hyperlipidaemia, hypertension, insulin resistance, abnormal glucose tolerance and cardiovascular disease (Ebbeling et al., 2002; Reilly et al., 2003; Weiss and Caprio, 2005; Verbeeten et al., 2011; Lakshman et al., 2012). Furthermore asthma, non-alcoholic fatty liver disease and sleep apnoea occur with increased frequency in obese children and adolescents (Redline and Tishler, 1999; Figueroa-Munoz et al., 2001; Ebbeling et al., 2002; Lobstein et al., 2004, 2015). In 2013, a published analysis of hospital admissions in England reported that since 2000, a more than four-fold increase in obesity-related diagnoses of children and adolescents aged 5 to 19 years was identified (Jones Nielsen et al., 2013).

Of critical concern, is the persistence of childhood obesity into adulthood, with an obese child 34 to 83% more likely of becoming an obese adult than a healthy weight child (Singh and Mulder, 2008). This presents significant implications for both population health and costs to health services (Butland and Jebb, 2007). Obesity in adulthood carries an increased risk of elevated morbidity, particularly related to cardiovascular disease, type 2 diabetes, a range of cancers, respiratory and musculoskeletal conditions (Janssen and Bacon, 2008; Tsiros et al., 2008; Franks and Hanson, 2010; Juonala et al., 2011; Logue and Sattar, 2011; Reilly and Kelly, 2011; Ng et al., 2014). This has a severe impact on both disability (Ezzati et al., 2005) and mortality (Ezzati and Hoorn, 2006). It was identified that 36 million disability-adjusted life years can be attributed to adult obesity and its consequences (Ezzati et al., 2005). Furthermore, a life expectancy reduction of three to 10 years is associated with obesity, which is comparable to the effects of lifelong smoking (Prospective Studies Collaboration, 2009).

Despite the extensive literature base supporting the link between obesity in adulthood and elevated morbidity and mortality, the risks to and impact of excess weight on an individual’s health have been widely debated (Ng et al., 2014). In addition, a number of academics proclaim this has been widely overstated (Flegal, 2005; Janssen and Bacon, 2008).  Some argue that studies proposing the risks of obesity, fail to consider confounding factors like exercise and diet and do not acknowledge the limitations of using BMI to estimate excess weight (Cundiff, 2006; Hawks and Gast, 2000; Baranowski et al., 2010).

In addition, and contradicting the general consensus, is a body of research, which has linked adult obesity as beneficial for protecting against infectious diseases, osteoporosis, and chronic obstructive pulmonary disease (Ernsberger and Haskew, 1987; Cassell and Gleaves, 2006). In spite of this, Ng et al., (2014), argued that *“findings of large pooling studies used for the GBD 2013 (Global Burden of Disease study), show consistent risks as BMI reached more than 23km/m2, especially for cardiovascular disease, cancer, diabetes, osteoarthritis and chronic kidney disease”* (p. 779).

2.5.2.2 Psychological and social health

For those children and adolescents who are obese, the associated psychological and social health outcomes *“immediate, apparent and influence many aspects of a child’s well-being”,* (Strauss and Pollack, 2003, p.746).  Evidence supports a heightened risk of mental health and well-being problems during the transitional life stage of adolescence (Merikangas et al., 2010; Flegal et al., 2013), with both obese children and adolescents more likely to experience behavioural, psychological and social problems (Griffiths et al., 2011). This includes depression and anxiety (Puhl and Latner, 2007), low self-esteem (Rees et al., 2011), bullying (Gatineau and Dent, 2011) and poorer social functioning (Griffiths and Page, 2008).  This presents a significant challenge for schools at both a primary and secondary level, with obese children and adolescents less likely to perform academically well than their healthy weight peers (Caird et al., 2011).

The increasing prioritisation of academic achievement in education (Bonell et al., 2014), means that for those leading and governing schools (i.e. headteachers and chairs of governors), the psycho-social outcomes of childhood and adolescent obesity, poor diet and low levels of physical activity poses a real threat to overall school performance (Taras and Potts-Datema, 2005; Florence et al., 2008).

It is important to state that not all overweight or obese children and adolescents experience negative psychosocial outcomes and a child’s familial structure and social context has the potential to mitigate against their potentially detrimental impact (Puder and Munsch, 2010). Despite this, obesity is considered the least socially accepted condition of childhood and the effects of bullying, victimisation, stigmatisation and discrimination attributed to childhood obesity (Story and Neumark-Stzainer, 2002; Reilly et al., 2003; Tang‐Péronard and Heitmann, 2008), can have an impact on whether and how an individual encounters lifelong health and social inequalities (World Health Organization Regional Office for Europe, 2014).

2.5.2.3 Financial and economic

Similarly to other countries across the world, the financial burden placed on healthcare systems by adult and childhood obesity in England has increased significantly (Department of Health, 2011; Pelone and Specchia, 2012).  Preventing, managing and treating the effects of obesity requires significant public resources (Butland and Jebb, 2007). The NHS alone spends £5 billion per year on treating the effects of excess fat (Department of Health, 2011).  In addition to pressures on the healthcare costs, obesity places escalating demands on the social care system, with severely obese people three times more likely to need social care than healthy weight people (Han et al., 2010). Whilst the direct costs are substantial, they do not reflect the extensive indirect costs of obesity to wider society - £27 billion a year in the UK by 2015 (Butland and Jebb, 2007). These costs can be attributed to a loss of productivity, increases in absenteeism and disability benefits claims (Wang et al., 2011).

**2.6 National approach to tackling childhood and adolescent obesity**

Since the early 1990s in England, obesity has been recognised as a threat significant enough to require the development of national population based policy actions to address it.  Within this time, both the policy context and political discourse of obesity has undergone considerable change in emphasis over the years (Vallgårda and Nielsen, 2015).  Until 2007, regardless of the government administration, addressing obesity has featured periodically across the political agenda in a variety of public health strategies, reports and inquiries (Jebb et al., 2013).

Alarm about the escalating severity of the challenge and scrutiny about the limited effectiveness of government action resulted in the publication of the influential Foresight report (Butland and Jebb, 2007) and the first national strategy for obesity (Department of Health, 2008).  Both brought about an important shift in how obesity was to be understood and tackled.  Preventing, managing and treating excess weight in children, adolescents and adults, became a cross-government responsibility, with a system-wide approach advocated in order for all sectors to play their crucial role (Department of Health, 2008).

A change in political leadership in 2010, brought a refreshed strategy (Department of Health, 2011), which emphasized and advocated for personal autonomy, local action throughout the life course and voluntary partnership arrangements across all sectors (Rayner and Lang, 2011; Swinburn et al., 2015).  This strategic approach was and remained widely criticised for failing to regard the complex multifactorial causes of obesity, and not utilising state intervention to influence population behaviour (Mayor, 2011; Gortmaker et al., 2011; Swinburn et al., 2011). Despite areas of policy action evidencing promising outcomes (Jebb et al., 2013), the ambition to halt and reverse the rise in childhood obesity prevalence remains broadly unachieved (NHS Digital, 2016a).

Explanations for this have been directed at the lack of long-term and sustained interventions and a failure by governments to truly embed the Foresight recommendations (Butland and Jebb, 2007) of system-wide leadership, accountability and engagement across all government departments (Hawkes et al., 2015; Roberto et al., 2015).  Furthermore, it has been argued that a limited evidence base on what works and why, has often led to confusion and cautious action when attempting to tackle childhood obesity (Lang and Rayner, 2007).

More recently, further strategic attempts to tackle the issue at a national level have been made by a majority Conservative government.  In 2016, after a series of delays, they launched ‘Childhood obesity: a plan for action’ (HM Government, 2016), which whilst falling short of a strategy (Lobstein and McPherson, 2016), sets out the government’s approach to tackling the national childhood obesity epidemic.  Actions include, an industry levy on soft drinks, a voluntary sugar reduction programme of specific foods, a commitment to making healthier options available in the public sector and a significant emphasis on the roles that schools (particularly primary) and early years settings will continue to play in the provision of healthy foods and physical activity for children.

Whilst being eagerly anticipated the plan has been heavily criticised as *“weak, disappointing, watered down, and underwhelming by doctors leaders, dentists, local government, national charities, and campaign groups”* (O’Dowd, 2016, p.1).  Furthermore, academics have deemed its publication as a missed opportunity, given its failure to meet key recommendations from both the Health Select Committee (House of Commons Health Select Committee, 2017) and WHO (World Health Organization, 2016c) on how to tackle childhood obesity (Lobstein and McPherson, 2016).  Examples of which include the failure to impose controls on marketing and price promotions of unhealthy foods and aside from the levy, the continued reliance on voluntary partnerships with organisations across sectors, i.e. food (Knai et al., 2016; O’Dowd, 2016).

In spite of the emerging concerns and strong scepticism (Lobstein and McPherson, 2016), the plan is proposed as *“the start of a conversation, rather than the final word”* (HM Government, 2016, p.3).  Consequently,  the Chief Executive of Public Health England argues its existence marks *“a very significant step forward”*, for tackling childhood obesity across the country (Civil Service World, 2016).

2.6.1 Preventing childhood and adolescent obesity

Within both historic and current national approaches to tackling the obesity epidemic, prevention has remained a fundamental strategic priority (Department of Health, 2008, 2011; HM Government, 2016).  Whilst treating childhood and adolescent obesity is of critical importance in order to preclude morbidity into adulthood (Uli et al., 2008; Dietz et al., 2015), it is argued that treatment alone cannot impact on enough of the population to make a meaningful difference to prevalence levels (Kumanyika et al., 2008).

Furthermore, obesity treatment is perceived as a complex, costly and challenging process, with significant variations in actual long-term benefits evidenced (Ebbeling et al., 2002; Han et al., 2010; Reinehr, 2013). Consequently, a substantial body of literature advocates for a major emphasis on preventing childhood and adolescent obesity (Kumanyika et al., 2008; Han et al., 2010; Lobstein et al., 2015; National Institute of Health and Care Excellence, 2015b; World Health Organization, 2016c).

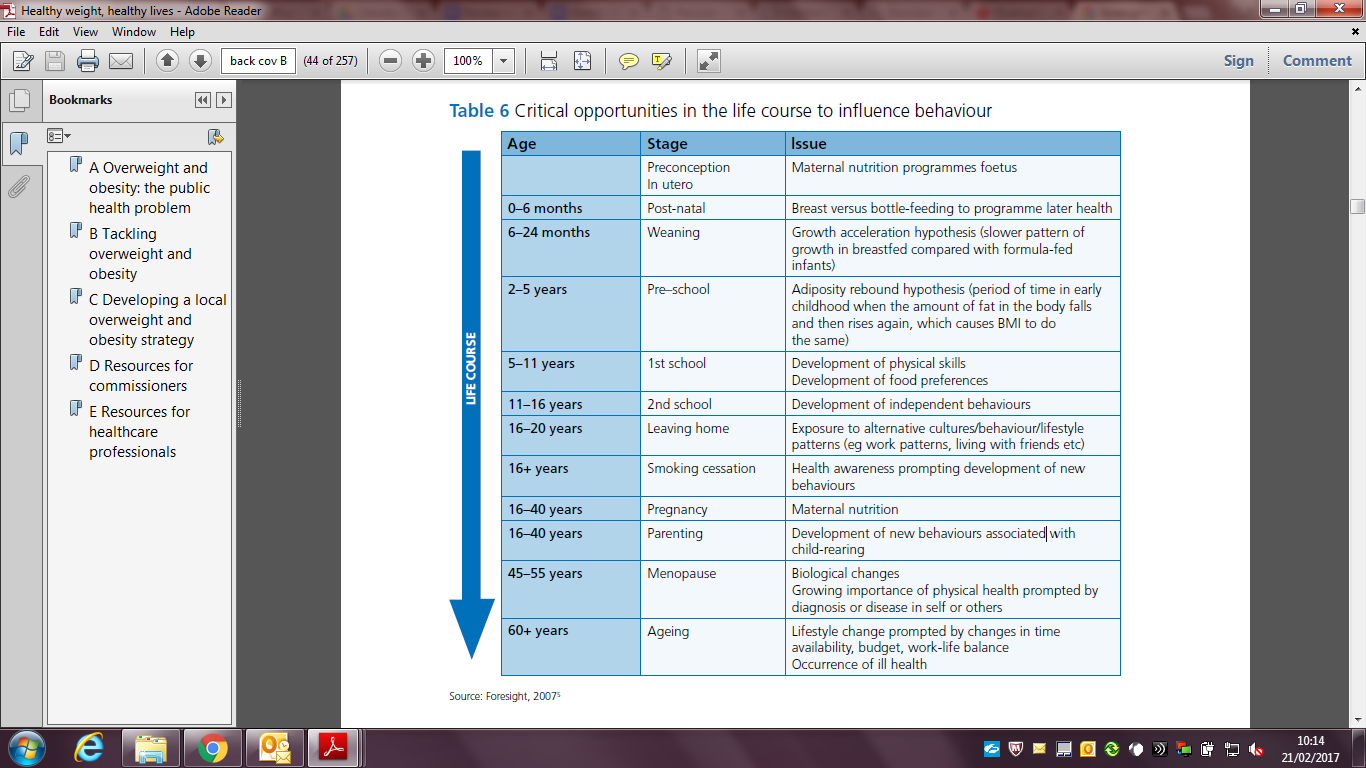
Crucial to preventative approaches, is the recognition that the time to consider obesity prevention *“is from early life and continues through every stage of the life course”* (Uauy et al., 2010, p.23). Evidence indicates (Butland and Jebb, 2007) that a number of points in an individual’s life course exist where there are opportunities to influence behaviour and therefore prevent obesity (Table 2). These points or ‘critical periods’ (Dietz, 1994; Daniels et al., 2005), relate to notable changes in individual physiology and obesity related behaviour (Lawlor and Chaturvedi, 2005).

2.6.1.1 Critical period for obesity prevention - adolescence

Whilst a number of critical periods exist for the development of obesity that persists into adulthood (Dietz, 1994), academics have argued that the three most notable are the prenatal period, the period of adiposity rebound (between ages 3 to 5 years) and of direct relevant to this doctoral study – the period of adolescence (Dietz, 1994; Lawlor and Chaturvedi, 2005).

Adolescence represents a unique and dynamic period of time in an individual's life, which dictates future risk of non-communicable disease and development of mental health problems (Gates et al., 2016; Kleinert et al., 2016). Referred to as the ‘transitional period’, adolescence begins with puberty and is marked by dynamic and significant physiological and psychological changes (Daniels et al., 2005).  During this period, increasing social and economic independence occurs as does the development of personal identity (World Health Organization, 2014), therefore adolescence presents both distinct opportunities and challenges for influencing health and well-being (Sawyer et al., 2012; Patton et al., 2014).

Table 2.2 – Critical opportunities in the life course to influence behaviour



(Source - Butland and Jebb, 2007)

Despite this, and the fact that an estimated 70% of premature deaths in adults can be attributed to behaviours started in adolescence, this critical period remains largely invisible, with an almost exclusive focus evident on children and adults within existing systems and structures (Sawyer et al., 2012; Gates et al., 2016). Consequently the recent Lancet Commission on adolescent health and wellbeing (2016), highlights the importance of advancing the adolescent health agenda, especially given that *“risks for cancer and cardiovascular disease in later life commonly start in adolescence (e.g. tobacco and alcohol use), or intensify during these years (e.g. overweight and obesity, physical inactivity, and poor diet)”,* (Patton et al., 2014, p.385).

In spite of increased global advocacy calling for countries to meet the unique health and well-being needs of adolescents (Gates et al., 2016; Kleinert et al., 2016), the recent national strategic approach to preventing obesity (HM Government, 2016), fails to explicitly reference or acknowledge this critical period.  Whilst referencing the prevalence of overweight and obesity in children aged 2 to 15 years, the plan does not distinguish between actions aimed at childhood and adolescence and the overriding focus remains on intervention at primary school age (4 to 11 years).  Despite this, undoubtedly a number of proposed actions support the obesity prevention agenda in adolescence and furthermore, programmes and policies intended to enhance maternal, infant, and child health will also positively influence the health of adolescents (Catalano et al., 2012).

2.6.1.2 Approaches to childhood and adolescent prevention

Identifying and implementing *“the most effective population-level obesity prevention strategies is among the most profound challenges in public health today”* (Huang and Glass, 2008, p.1811). Approaches to prevention largely aim to modify the diet, physical activity or sedentary behaviour of children and adolescents (Han et al., 2010; Uauy et al., 2010; World Health Organization, 2016c).  Interventions range from upstream, which aim to influence the wider social and environmental determinants of obesity to middle and downstream interventions implemented at a settings level to support individual behaviour change (Swinburn et al., 2011; Roberto et al., 2015) (Swinburn et al., 2011; Roberto et al., 2015).

To date, an extensive range of national policy actions have been developed to facilitate population-wide prevention of childhood and adolescent obesity including, the creation of the Healthy Child Programme, a robust monitoring system (NCMP), restrictions on food advertising, cross-sector public health networks (e.g. public health responsibility deal), social marketing initiatives (e.g. Change4Life, Start4Life), school programmes and standards (e.g. school sport funding, nutritional standards) and the development of weight management resources (e.g. NHS Choices) (Jebb et al., 2013). More recently and as previously discussed, is the government's new action plan to tackle childhood obesity (HM Government, 2016).  This builds on existing preventative action (Lobstein and McPherson, 2016) in addition to introducing *‘’two world-leading measures: the sugar levy, and a programme to take 20% of sugar out of food groups most consumed by children”* (Civil Service World, 2016).

Assessing the effectiveness of upstream government policies on preventing childhood and adolescent obesity is challenging (Lobstein and Baur, 2005).  Difficulties are often experienced in providing robust evidence both before and after population-wide initiatives are implemented (Gortmaker et al., 2011; Brinsden and Lobstein, 2013; National Institute of Health and Care Excellence, 2015b).  In comparison, a plethora of research exists evaluating midstream and downstream level interventions across community, home and school settings (Doak and Visscher, 2006; Waters and Silva-Sanigorski, 2011; National Institute of Health and Care Excellence, 2015b; Wang et al., 2013, 2015). Findings identified modest, but at times significant evidence for preventative interventions in school settings, where a home or community element was included, and when both diet and physical activity were addressed.  However due to the complex environmental and social drivers of obesity (Butland and Jebb, 2007) it is important to reflect that *“schools may not be effective in reducing the risks posted in other settings*”  (Wang et al, 2013, p155).  Despite this, in England the role of schools remains a focal point for action to improve healthy lifestyle behaviours and prevent childhood and adolescent obesity (NICE, 2015a; 2015b, HM Government, 2016).

**2.7 Health promoting schools**

As previously identified, childhood and adolescence presents crucial periods of *“biological and social change”* (Langford and Bonell, 2015, p.2),where during this time experiences have the potential to affect health, economic and social outcomes in adulthood (Kelder and Perry, 1994; Wadsworth and Kuh, 1997; Singh and Mulder, 2008; Kessler et al., 2010). Consequently, it has been argued to be critically important to promote health and well-being and establish early positive experiences throughout childhood and adolescence (Sawyer et al., 2012).

The concept of both primary and secondary schools being a powerful domain for promoting health and shaping children’s health behaviour is well-established (Flynn et al., 2006; National Institute of Health and Care Excellence, 2006; World Health Organization, 2012; Langford and Bonell, 2015). Emerging from the Ottawa Charter in 1986 was the early notion that they are uniquely placed to comprehensively, efficiently and sustainably promote health to the majority of children across a social spectrum (World Health Organization, 1986b). In addition, the connection between health and education was and remains acknowledged and advocated for (Langford et al., 2017).

Health behaviours during childhood and particularly adolescence (i.e. obesity, physical activity, smoking, alcohol) are evidenced to be inextricably linked to a child’s ability to learn, engage and achieve both academically and socially (Duckworth and Seligman, 2005; Murray et al., 2007; Story et al., 2009; Stead and Neville, 2010; Suhrcke and Nieves, 2011; Gutman and Vorhaus, 2012). Schools are therefore argued to have a vested interest in positively influencing children’s health and well-being (Swinburn et al., 2005; Suhrcke and Nieves, 2011) and this has been championed throughout national guidance (National Institute of Health and Care Excellence, 2006; Department of Health, 2011; Public Health England, 2014c; HM Government, 2016).   In spite of this, Bonell et al., (2014) argued that the escalating government prioritisation of academic achievement in school settings across primary and secondary schools has resulted in health and well-being being increasingly ignored at a policy level in England.

During the 1980s, recognition of the inherent and reciprocal relationship between health and education, led to the development of the Health Promoting Schools (HPS) framework, an eco-holistic, whole-school approach underpinned by the values of the Ottawa Charter (Langford and Bonell, 2014).  In spite of the limited, but promising child health outcomes evidenced from the use of the HPS framework (Lister-Sharp, 1998; Mũkoma and Flisher, 2004; Stewart et al., 2007; Langford and Bonell, 2015), primary and secondary schools in England and across the world continue to embed its principles.  This is particularly relevant for obesity prevention, where each of the three overarching areas of school life detailed in HPS (curriculum, ethos/environment and family/community engagement) have been evidenced to impact upon children’s and adolescent’s physical activity and dietary behaviours (Dadaczynski et al., 2010; Dadaczynski and Vries, 2013; Waters and Silva-Sanigorski, 2011; Fung et al., 2012; Langford and Bonell, 2014, 2015; Langford et al., 2017). Support exists for utilising the theoretical framework of HPS for preventative action however relevant theories including Health Behaviour Theory and Organizational Development Theory are also proposed (Jones et al., 2014).

It is important to reflect that not all research advocates a strong emphasis on obesity prevention in school settings.  A small body of literature has deemed schools to be obesogenic environments, with claims controversially suggesting they actually contribute to sedentary behaviour, unhealthy dietary habits and low levels of physical activity (Lowden and Scottish Council for Research in Education., 2001; Stewart et al., 2004; Anderson and Butcher, 2006; Kelsall, 2015). Furthermore, inconclusive and elusive findings from school-based prevention, and the sheer scale of the obesity epidemic, has led to calls to move beyond the central focus of education settings and turn public health attention to preventative action in family and community domains (Budd and Volpe, 2006; Gittelsohn and Kumar, 2007; Odum and McKyer, 2013).

Despite these suggestions overriding academic opinion remains that childhood and adolescent obesity cannot be prevented without at least engagement from schools at a primary and secondary level (Procter et al., 2008; Waters and Silva-Sanigorski, 2011). It is however both unfair and unrealistic to expect them to achieve this in isolation (Story et al., 2009) and therefore all settings where children live and grow can and should play a vital contribution to preventative action (Butland and Jebb, 2007; Lobstein et al., 2015).

2.7.1 Childhood and adolescent obesity prevention in schools

Research on preventing childhood and adolescent obesity has proliferated over the past two decades.  An increasing number of systematic reviews and meta-analyses have been conducted to examine and assess the effectiveness of childhood and adolescent obesity prevention interventions across a variety of settings, i.e. schools, families, communities and primary care (Doak and Visscher, 2006; Sharma, 2006, 2007; Brown and Summerbell, 2009; Kropski et al., 2008; Katz, 2009; Bourdeaudhuij, 2011; Waters and Silva-Sanigorski, 2011; Khambalia et al., 2012; Williams and Henley, 2013; Wang et al., 2015; Guerra et al., 2015).

Articles and interventions related to school settings have dominated the literature base, with the vast majority of primary research conducted in early years, primary or secondary sector schools (Waters and Silva-Sanigorski, 2011; Wang et al., 2015). In the main, school based interventions included within identified reviews, delivered or included the following:

* Physical activity sessions
* Provision of healthy foods
* Changes to the school environment
* Distribution of educational materials
* Formal health education through the curriculum

A recent systematic review and meta-analysis (Wang et al., 2015), investigating what childhood obesity prevention programmes work, highlighted the plethora of research in this field and the focus on school settings.  The authors identified 139 intervention studies from high-income countries, comprising randomised controlled trials, quasi-experimental studies and natural experiments, examining dietary, physical activity behaviours or both, in children aged 2 to 18 years.  A total of 115 out of 139 interventions were primarily school based with 66% demonstrating favourable intervention effects on adiposity-related outcomes (of which 36% were statistically significant).  Overall, the review claimed *“at least moderate strength of evidence to support the effectiveness of school-based interventions”* (Wang et al., 2015, p.556), which in the main supported previous findings from a Cochrane review (Waters and Silva-Sanigorski, 2011).

Of relevance to this study is the fact that findings were predominantly related to children aged 6 to 12 years and a lack of interventions in adolescence was evident.  This pattern of age bias in school based interventions was similarly identified in other reviews (Sharma, 2006; Waters and Silva-Sanigorski, 2011; Langford et al., 2017).  Of the 55 studies included in the most recent Cochrane review on childhood obesity prevention (Waters and Silva-Sanigorski, 2011) only eight targeted children aged 13 to 18 years.  A paucity of original research either including or exclusively concentrating on prevention in secondary school aged children has led to an inability to draw decisive conclusions about what works and why during adolescence (Sharma, 2006, 2007; Brown and Summerbell, 2009; Waters and Silva-Sanigorski, 2011; Langford and Bonell, 2015). For example, of the eight studies (targeting 13 to 18 years old) in the Cochrane review, only mixed and modest findings were reported related to BMI changes, diet and physical activity behaviours. Waters and Silva-Sanigorski (2011) stated that although promising, the small number and heterogeneity of studies meant they were unable to state confidently whether obesity prevention interventions during adolescence are effective.

Suggestions for the age imbalance in the evidence base centres on the perception that the earlier interventions take place in childhood, the greater the impact on the development of health behaviours and prevention of obesity later in life (Sharma, 2006).  Whilst strong evidence supports this standpoint (Waters and Silva-Sanigorski, 2011), others propose the imbalance is unjustified (Williams and Henley, 2013).  Later childhood, i.e. adolescence, still provides critical periods of change and therefore windows of opportunity to influence physical activity and dietary behaviour (Crone and Dahl, 2012; Hagell et al., 2015).  For example, physical activity levels decline with age in both sexes (Department of Health, 2011), increasing age provides increasing autonomy in dietary behaviours (Story and Neumark-Stzainer, 2002) and the influence of peers during adolescence is notable (Maxwell, 2002; Steinberg and Monahan, 2007). Secondary schools might therefore be the last chance to influence the health behaviours of a large number of children during this critical period.  Academics have therefore called for an increased research focus on obesity prevention across adolescence and in secondary school settings (Waters and Silva-Sanigorski, 2011; Langford and Bonell, 2014).

Chilton et al., (2015) argued that due to the heterogeneity of study designs, it is challenging to generalise the evidence and be conclusive about the effectiveness of school-based health promotion interventions (especially in relation to childhood and adolescent obesity prevention). Substantial variations in intervention approaches, location, durations, follow-up periods, outcome measures, sample sizes, populations and analytical approaches, present difficulties in trying to identify specific strategies (or combined strategies) that are the most effective (Lister-Sharp, 1998; Brown and Summerbell, 2009; Bourdeaudhuij, 2011; Waters and Silva-Sanigorski, 2011; Khambalia et al., 2012; Wang et al., 2015).  This is of particular importance at a secondary school level, where the limited evidence base presents further challenges to understanding and examining effectiveness.

In spite of these limitations, a number of intervention points or critical success factors were consistently identified across systematic reviews and meta-analyses that were supported by at least a moderate level of strength (Waters and Silva-Sanigorski, 2011; Khambalia et al., 2012; Wang et al., 2015; Guerra et al., 2015). The highest proportion of studies at both a primary and secondary school level with favourable or successful outcomes were:

* School based with home or family involvement
* Multi-component focusing on both physical activity and dietary behaviours
* Providing improved physical activity facilities and healthy food choices
* Integrating nutrition and physical activity in the standard curriculum
* Longer in duration
* Supported by and provided support to school stakeholders including teachers and leaders

2.7.2 Childhood obesity prevention - school stakeholders

One of the critical success factors for obesity prevention interventions, identified across a number of systematic reviews was the role and engagement of school stakeholders.  This is supported by a wealth of academic literature, which has proposed the crucial importance of school staff, parents and wider community partners for influencing the outcomes of health promotion activity and obesity prevention in primary and secondary schools (Deschesnes et al., 2003; Bradley et al., 2007; Keshavarz and Nutbeam, 2010; Flaschberger, 2012; Hung et al., 2014).  Of notable significance, is the imperative role of school leaders (headteachers), and the school board management (governors) (Yager and Dea, 2005; Inchley et al., 2007; Swanton, 2008; Keshavarz and Nutbeam, 2010; Clarke et al., 2013, 2015).

*School headteachers and governors*

Given the growing levels of school autonomy and self-governance (Machin and Silva, 2013), schools and their leaders are increasingly able to dictate the extent to which national policy recommendations about health and well-being are embedded and translated into practice (Dixey and Wordley, 2010).  Examples related to adolescent obesity prevention in secondary schools include:

* Academies established prior to 2013, remain able to choose the nutritional value and quality standards of their school food provision (Dimbleby and Vincent, 2013)
* The recommendation to provide a minimum of two hours of physical education (PE) a week is optional and schools are free to define locally what constitutes as PE (Department for Education, 2013a)
* Personal, Social, Health and Economic education is a non-statutory subject, with secondary schools given the flexibility to decide whether and how they teach it (Department for Education, 2013b; Bonell et al., 2014)
* In 2011, the National Healthy Schools Programme became a voluntary and schools led initiative rather than centrally driven as in previous years (Shepherd and Dewhirst, 2013)
* Only at a school category ‘outstanding’ does the Ofsted Inspection Handbook make overt reference to supporting pupils to make informed choices about healthy eating, fitness and emotional/mental well-being however it does not determine how this should be achieved (Ofsted, 2016)

As the operational and strategic leads, headteachers and governors play a decisive part, arguably the most decisive in determining a school’s engagement in health promotion and childhood obesity prevention (Kam et al., 2003; Marks, Rowling, et al., 2011; Marks, Samdal, et al., 2011; Huberty et al., 2012; Little et al., 2013; Christian et al., 2015; Todd et al., 2015).  In 2015, NICE published a pathway for school-based childhood obesity prevention interventions in school settings (National Institute of Health and Care Excellence, 2015a). Bringing together all NICE guidance and quality standards, the expected roles and responsibilities of school headteachers and chairs of governors were explicitly referenced.

*“Headteachers and chairs of governors, in collaboration with parents and pupils, should assess the whole school environment and ensure that the ethos of all school policies helps children and young people to maintain a healthy weight, eat a healthy diet and be physically active, in line with existing standards and guidance”* (National Institute of Health and Care Excellence, 2015a, p.4)*.*

Despite being viewed as crucial stakeholders in the NICE pathway and across academic literature, little is known about their perspectives of obesity in childhood or adolescence particularly at a secondary school level.  As this is the central focus of this research study a detailed and systematic approach to reviewing research relevant to the proposed question was undertaken (see chapter three).  Prior to this, the second overarching section of this chapter is presented, providing contextual information regarding the study setting – secondary schools in England.

**Section two: Study setting**

**2.8 The education system in England**

The UK, similar to many countries across the world, enforces a period of compulsory education (5 to 16 years), which is in the main achieved through school attendance.  Within England, there are five stages of education: early years, primary, secondary, further education and higher education.  The Department for Education holds the responsibility for education and children’s services in England, including teaching and learning across the first four educational stages (Department for Education, 2016a). Education reforms and changes to educational policy in England especially since the Conservative/Liberal Democrat Coalition Government took office in 2010, have resulted in significant alterations to the school landscape (Glatter, 2012; Simkins, 2014). Between 2010-2015, a substantial increase in the number of independently publicly-funded schools, a reformed Office for Standards in Education (Ofsted) inspection framework and fundamental changes to the relationship between schools and local authorities was witnessed (Higham and Earley, 2013).  These changes were reportedly driven by a political desire to improve educational outcomes and create self-improving school systems (Hargreaves, 2011, 2012). Schools and their leaders have increasingly been encouraged to access greater autonomy, freedom and self-governance (Sandals and Bryant, 2014).

More recently, the majority Conservative government has proposed controversial major reforms, including a proposal to convert all state-funded schools to academies by 2022, new accountability measures and significant changes to the curriculum (Roberts and Bolton, 2016). Consequently, education at all levels in the UK is deemed to be in a ‘difficult period’ (The Lancet, 2013).

2.8.1 School characteristics

In England, primary schools typically accept pupils aged 4 to 11 years and secondary schools aged 11 years and above, but there are increasing numbers of ‘All-through schools’, who take pupils of all compulsory school ages.  Different types of schools exist within England, with the vast majority (approximately 90%), being funded by the state (Department for Education, 2016b). As of January 2016, the government were responsible for funding and inspecting 16,778 primary schools and 3,401 secondary schools across England (not including special schools), (Department for Education, 2016b). At both primary and secondary level, state funded schools can broadly be categorised into either ‘maintained’ or ‘academies’.  Table 2.3 presents key characteristics of these two overarching state funded school groups in England

**Table 2.3** – Key characteristics of state funded school groups in England

|  |  |  |
| --- | --- | --- |
|  | **School group** | |
| **Maintained schools** | **Academies** |
| **School type** | Foundation, community, grammar, voluntary controlled/voluntary aided (often faith schools) | Academies, free, city technology colleges, studio |
| **Funding source** | Publicly funded and disbursed by local authorities | Publicly funded and directly by the Department of Education |
| **Funding allocation** | Schools free to allocate funds, but local authorities retains a proportion for central services | Full flexibility to allocate funds, including services normally provided by local authorities |
| **Accountability** | Controlled and run either by the local authority or the school governing body. | Through a contract directly with the government.  They are free from local authority control |
| **Curriculum** | Must meet the requirements of the National curriculum | Exempt from national curriculum although must teach certain subjects (e.g. Maths, English, Science |
| **Teaching hours** | Extensive consultation process has to be used to change school day | Free to change day and term lengths |
| **Performance monitoring and reporting** | By Local Authority and Ofsted (Office for Standards in Education) | Ofsted and Department for Education |
| **Personnel - pay and conditions** | Follow Nationally set pay and conditions | Free to set own pay and conditions |
| **Decision-making** | Governing body and local authority | Governing body/Trustees |

(Source - Network, 2015; Department for Education, 2016b)

In addition to state funded schools, as of January 2016, 2,311 independent primary and secondary level schools (not including special), provided privately funded education for children across England (Department for Education, 2016b).  Despite the necessity to be registered with government, they do not receive financial assistance from the state and over half are inspected by Ofsted (with the remainder inspected by alternative organisations), (Department for Education, 2015c). Independent schools are able to determine their own curriculum, personnel arrangements and teaching hours.

2.8.2 Secondary schools in England

Of particular interest to this study in relation to adolescent obesity prevention is the third educational stage (secondary education).  In England, secondary schools cater for the compulsory education of 11 to 16 years old, with some providing teaching and learning up to the age of 18 years.  Pupils complete their secondary education by undertaking formal assessments most commonly the General Certificate of Secondary Education (GCSE).  The Department for Education releases information every year detailing statistics related to schools and their pupils.  The latest statistical release, reports that in England -

* There are 3,401 state-funded secondary schools
* 3,193,420 pupils attend a secondary school
* 65.6% of all secondary school pupils attend academies
* 939 is the average number of pupils in a secondary school
* 13.2% of secondary school pupils were eligible for and claiming free school meals\*
* 27.9% of secondary school pupils are recorded as of minority ethnic origin

(Source - Department for Education, 2016b)

\*Eligibility for free school meals is dependent on a parent/carer being in receipt of one or more income based benefits or support under Part VI of the Immigration and Asylum Act 1999

2.8.3 School leadership and governance

Effective leadership and governance is of critical importance to determining student outcomes and the overall performance of a school (Leithwood and Louis, 2004; Brundrett, 2008; Day et al., 2009; Sammons et al., 2011; Department for Education, 2014a, 2015b). All schools in England are legally required to have an appointed headteacher and governing body, which includes an elected chair of governors.

As *the “guardians of the nation’s schools”*, (Department for Education, 2015a, p.5), headeachers and chairs of governors are argued to hold highly influential positions within society, impacting on a wide range of stakeholders across the community their school serves.  Consequently, significant demands and pressures are associated with holding these critical positions in both primary and secondary schools (James et al., 2012; Wilkins, 2015).

The Department for Education sets out the distinct roles, responsibilities and expected standards of headteachers and chairs of governors (Department for Education, 2014a, 2015b). The governing body, led by the chair of governors is the key strategic decision-making hub of every school.  The governing body is expected to set the school’s strategic direction, oversee financial management and hold the headteacher to account on a school’s educational performance (Department for Education, 2014a).

The headteacher provides professional leadership and is responsible for the operational management, organisation and control of a school.  As the responsible lead for teaching and learning, headteachers create necessary policies and practices in order to ensure the highest educational outcomes are achieved (Department for Education, 2015b).  Whilst fulfilling largely disparate, but complementary functions, both are expected to develop an effective partnership (James et al., 2012) with governors acting as a critical friend (Department for Education, 2015b) and headteachers as their main advisor.

The focus on developing self-improving school systems (Hargreaves, 2011, 2012), has increased the expectation that headteachers and chairs of governors (representing the governing body) will operate with greater autonomy, accountability and control (Earley and Bubb, 2013; Wilkins, 2015).  Whilst this has afforded headteachers and chairs of governors greater flexibility in decision-making for raising their school’s standards, a paradox exists.  In spite of the shift to devolve power to schools, there are some practitioners within those settings who perceive themselves to even more constrained by current government requirements (Glatter, 2012; Higham and Earley, 2013).

The above reflections about school organisation and leadership and governance present important considerations for the proposed research topic, given that headteachers and chairs of governors are identified as crucial stakeholders for childhood and adolescent obesity prevention.  Understanding their local context is therefore imperative, in order that perspectives about obesity are situated against the backdrop of current educational reforms, practices and experiences.

**Chapter 3**

**Systematic review and qualitative synthesis**

**3.1 Introduction**

This chapter details the processes and outcomes of conducting a systematic review and qualitative synthesis, of academic literature pertinent to the research topic and question under study.  The chapter begins by presenting the proposed research question for this systematic review and qualitative synthesis, in addition to the aims and objectives.  Following this, the methods utilised for searching for, screening and selecting relevant academic literature is reported. An overview of how data and findings were extracted and synthesised from the resultant literature obtained is then provided.

The second part of this chapter, presents the results of the systematic review and qualitative synthesis.  This includes a tabular summary of each included study, an overview of the quality assessments performed, and the outcomes of a thematic synthesis undertaken across and inclusive of all selected studies.  The chapter concludes with a discussion of the key findings, the limitations of the review itself and recommendations for future research.

**3.2 Scope of the review**

The previous chapter provided a comprehensive background to the review topic under study, both in relation to the scale and severity of adolescent obesity, but also the role and importance of secondary school settings and key school stakeholders in its prevention.  Furthermore, chapter two explicitly justified that given their leadership and governance responsibilities, headteachers and chairs of governors play a crucial role in determining whether and how a secondary school engages in preventing obesity in adolescence.  Consequently exploring their views on this topic was deemed of significant importance and forms therefore the central focus of this doctoral research study.  To guide this exploration, the following overarching research question was established:

*‘What are headteachers’ and chairs of governors’ perspectives on adolescent obesity and its prevention in English secondary school settings?’*

In order to position the proposed research question within the established evidence base, and identify literature, which could contribute meaningful and existing insights, it was deemed necessary to conduct a literature review.  A literature review is defined as a *“systematic, explicit and reproducible method for identifying, evaluating and synthesising the existing body of completed work produced by researchers, scholars and practitioners”* (Fink, 2005, p.3).  Whilst many types of literature reviews exist (Kastner et al., 2012), the importance of employing a systematic approach regardless of type, is argued on the basis of enhancing a literature review’s clarity, validity and auditability (Booth et al., 2016).  A multitude of factors influence which type is chosen, including the availability of reviewer time and resources, level of expertise and fundamentally the overall purpose of conducting the review (Okoli, 2015).

For this doctoral study, it was considered appropriate to conduct a systematic review and qualitative synthesis. (Booth et al., 2016) propose that a gold standard systematic review:

*“Prescribes an exhaustive search of the literature, checklist-driven quality assessment, complex synthesis using textual, numerical, graphical and tabular methods and sophisticated analysis”* (p23).

Despite being resource and time intensive and requiring an extensive range of skills to conduct a systematic review (Booth et al., 2016), the researcher wanted to identify *“the full and comprehensive body of available evidence to provide the best available answer”* to the research question posed. (Rousseau et al., 2008, p.478). The decision to employ a qualitative rather than quantitative review and synthesis, was based on the desire to obtain thick and rich data that would elicit a greater depth of understanding of headteachers’ and chairs of governors’ perspectives (Grant and Booth, 2009).

Whilst primarily this was for the purpose of enhancing the researcher’s knowledge of the specific field of study and identifying gaps in the evidence base, scoping relevant literature for this review also presented the additional value of informing the research design, data collection methods and providing crucial points to reflect on in the thesis discussion (chapter nine).

*Aim and objectives*

The aim of this review was to systematically identify and synthesise the research literature concerning the ‘*headteachers’ and chairs of governors’ perspectives on childhood or adolescent obesity and its prevention in school settings’*.  The decision to broaden the scope of the review wider than the original research question, i.e. to include both childhood and adolescent obesity across school settings in general is discussed in section 3.2 below.

In order to achieve the overarching aim, the follow objectives were established for this review:

* Define the review scope and develop a review protocol (see Appendix A)
* Undertake a systematic literature search, employing a robust search strategy and searching techniques
* Perform screening on the obtained results, ensuring study eligibility against set inclusion and exclusion criteria
* Complete a quality assessment of each included study using the CASP tool for qualitative studies (Critical Appraisal Skills Programme (CASP), 2014)
* Undertake data extraction and perform thematic synthesis in order to integrate the findings of multiple qualitative studies

It is important to note that this systematic review and qualitative synthesis was registered and published on PROSPERO (Registration number - CRD42017069836). PROSPERO is an international database, which aims to provide a comprehensive list of prospectively registered systematic reviews from a variety of disciplines where there is a health related outcome (PROSPERO, 2017).

3.2.1 Defining the scope

Having developed the research question, the researcher utilised a formal structure in order to *“unpack that question further into its component concepts”* (Booth et al., 2016, p.86). Argued to be appropriate for qualitative research questions, the SPICE framework (Setting, Perspective, Interest - Phenomenon of, Comparison, Evaluation), enabled key concepts to be identified and key search terms to be developed (Table 3.1), (Booth, 2004).

In order to trial the appropriateness of the key concepts and search terms developed from the SPICE framework, scoping searches were undertaken in August 2015 for the purpose of preparing for PhD confirmation review.

Table 3.1 - SPICE framework used to define the review scope and study selection

|  |  |
| --- | --- |
| Setting | Secondary schools in England |
| Perspective | Headteachers or chairs of governors |
| Interest (Phenomenon of) | Adolescent obesity |
| Comparison | Not applicable |
| Evaluation | Perspectives |

A preliminary scoping search was repeated again in February 2017.  The scoping searches on both occasions resulted in no directly relevant studies being identified despite five large electronic databases being utilised (Medline, PubMed, EMBASE, PsychINFO, CINAHL).  The searches did however result in a number of studies being discovered, which although were perceived to be outside of the defined scope presented in table 3.1, were still viewed as offering potential value.  This included qualitative empirical research exploring primary school headteachers’ or chairs of governors’ perspectives on childhood rather than adolescent obesity within both UK and non-UK settings.

Consultation with an expert in evidence based information practice, confirmed that whilst it is entirely legitimate for a systematic review to yield minimal or in fact no studies, in this instance there would be value in widening the original scope of the review (Personal Communication, 2017 - Dr Andrew Booth, ScHARR, The University of Sheffield).  It was agreed that although adopting a broader scope could reduce the direct relevance of the findings obtained, resultant studies centred on alternative settings (i.e. primary instead of secondary schools and non-UK instead of UK), still could contribute useful and pertinent insights.  Consequently the research question for the postgraduate research study was refined and expanded for the purpose of this review to:

*‘What are headteachers’ and chairs of governors’ perspectives on childhood or adolescent obesity and its prevention in school settings?’*

In addition, to refining the review question, the associated SPICE framework was revisited and revised (Table 3.2).

Table 3.2 - Revised SPICE framework used to define the review scope

|  |  |
| --- | --- |
| Setting | Schools (at primary or secondary education level - 5-16yrs) in a UK or non-UK context |
| Perspective | Headteachers or chairs of governors |
| Interest (Phenomenon of) | Childhood or adolescent obesity |
| Comparison | Not applicable |
| Evaluation | Perspectives |

**3.3 Review methods**

3.3.1 Search strategy

Prior to conducting the literature search, the SPICE framework formed the basis of identifying an extensive range of keywords, which could be employed using Boolean logic and adjacency operations within electronic databases, i.e. combining words or phrases with operators such as AND, OR or ADJ (Hart, 2001).  This was in recognition of the fact that in different settings, different words or phrases could exist to denote the same participant or phenomenon of interest.  For example in non-UK settings, headteachers can be called ‘Principals’ or ‘Directors’ and obesity can be labelled ‘excess weight’ or ‘overweight’.  The comprehensive list of terms therefore utilised and combined during the searching process is presented in Appendix B.

Having established the key search words and the method of combining them (i.e. boolean logic), the researcher undertook three steps between March and June 2017, to ensure a systematic and robust searching process was completed -

1. Via Healthcare Databases Advanced search (through NICE), the following electronic databases were searched - AMED, BNI, CINAHL, EMBASE, HMIC, Medline, PubMed, PsychINFO
2. Via EBSCO education databases, the following electronic databases were searched - Education Abstracts, British Education Index, Child Development & Adolescent Studies, Educational Administration Abstracts, ERIC via EBSCO
3. The Cochrane Library of databases and OpenGrey were searched

Where available and appropriate, in addition to free text searching, subject headings (including MeSH - Medical subject headings) were utilised to identify relevant literature within electronic databases (Booth et al., 2016).  Given the expected paucity of literature available to address the review question posed, the search strategy was not restricted by date, study type or language.  In order to provide an example of the robust search strategy employed by the researcher, Appendix C presents a detailed account of a search employed for step one of the above process.

3.3.2 Screening and selecting studies

Frequently there was insufficient information from the title to indicate whether an article would be of relevance.  Consequently, both the titles and abstracts of studies resulting from each stage of the three step searching process, were practically screened (Okoli, 2015) for duplication and eligibility against initially and intentionally overly inclusive criteria, i.e. literature focusing on schools, general school stakeholders perspectives and any reference to obesity.  This approach was employed to minimise the risk of inappropriately excluding studies by a single reviewer.  Once this had been completed, titles and abstracts were screened again reflecting on the SPICE framework developed (table 3.2).

Full-text copies of studies of interest resulting from this screening process were obtained and their eligibility checked against explicit inclusion and exclusion criteria (table 3.3 below).

Table 3.3 - Inclusion and exclusion criteria for selecting studies

|  |  |
| --- | --- |
| **Inclusion criteria** | **Exclusion criteria** |
| Setting   * Primary or secondary level schools (i.e. education provision for ages 5-16yrs)       Perspective   * Explicit reference to and inclusion of headteachers’ or chairs of governors’ perspectives (identifiable in both study methods and extractable from findings)     Phenomenon of interest   * Explicit reference to childhood or adolescent obesity (including overweight) * Prevention of obesity         Study types   * Empirical qualitative studies and mixed-methods studies (inclusive of qualitative findings that can be extracted)   Language   * English language studies | Setting   * Pre-school, further or higher education contexts (i.e. education provision for ages <5yrs or >16yrs)     Perspective   * Other school stakeholders’ perspectives without reference to headteachers or chairs of governors (i.e. school nurses, teachers, parents, pupils)     Phenomenon of interest   * Dietary or physical activity behaviours only (without explicit reference to obesity or obesity prevention) * Setting specific obesity prevention policies, strategies or interventions * Treatment of obesity     Study types   * Quantitative studies, non-empirical studies (i.e. editorials), non-peer reviewed literature (i.e. theses)     Language   * Non-English language studies |

3.3.3 Quality assessment method

Critical appraisal (i.e. quality assessment) is described as *“the process of assessing and interpreting evidence by systematically considering its validity, results and relevance to an individual’s work”* (Horsley et al., 2011, p.1).  Argued to be an essential process when conducting systematic reviews, critical appraisal not only enables the quality of included studies to be assessed, but supports a reviewer to identify recommendations for future research (Booth et al., 2016). However critically appraising qualitative research is a contested methodological issue, with arguments centred on whether and how the quality of qualitative research should be assessed (Popay et al., 1998; Dixon-Woods and NHS Health Development Agency., 2004).

More recently, the debate has progressed from whether critical appraisal of qualitative research should be undertaken, to which criteria should be adopted (Booth and Carroll, 2015).  This debate is especially relevant given that over a hundred tools are proposed as being able to undertake the task (Higgins and Green, 2011). For the purpose of this review, quality assessment was undertaken to mediate messages (Grant and Booth, 2009), but not to inform inclusion or exclusion of studies.  This was due to the perception that *“even low quality studies may be able to contribute to the findings”* (Bridges et al., 2010, p.91).

To guide the quality assessment of included studies for this systematic review and qualitative synthesis, the use of a Critical Appraisal Skills Programme (CASP) checklist for qualitative research (Critical Appraisal Skills Programme (CASP), 2014) was deemed to be appropriate.  This was chosen given that it is useful for researchers and reviewers with limited experience of a formal quality assessment process (Mills and Birks, 2014).

The CASP checklist for qualitative research poses ten questions (see Appendix D) related to broad and overarching considerations of research quality, i.e. validity, reliability and relevance (Critical Appraisal Skills Programme (CASP), 2014).  Appendix D, presents the form developed to assess research quality based on the ten checklist questions. An overview of the assessed quality of studies is included in the review (see results section below), but as previously stated studies were not excluded on the basis of inadequate quality.  Given that sufficient quality was not a determining criteria for inclusion in this review, it was viewed as unnecessary to have a second reviewer independently and critically appraise a sample of resultant studies.

3.3.4 Data extraction

To facilitate the ability of obtaining *“meaningful information from each included study”* (Booth et al., 2016, p.145), the researcher committed to a systematic process of data extraction.  Extracting data from each included study was undertaken in order to support the process of quality assessment and qualitative evidence synthesis and analysis.  A data extraction form was utilised (see Appendix E), to guide the capture of relevant data from the included studies and ensure the task was completed in a robust manner.  The data extraction form was adapted from Booth and colleagues (Booth et al., 2016) and the Joanna Briggs Institute Qualitative Assessment and Review Instrument (The Joanna Briggs Institute, 2011).  The extracted information centred on the following:

* Study details - Author(s), year of publication, study aims/objectives
* Study context - Location and setting of study
* Study population - Participant information
* Study phenomena of interest - Topic of interest
* Study methodology - Approaches to data collection and analysis
* Study findings - Author interpretations and/or participant verbatim quotes within results section of papers

Whilst the form was utilised to enhance consistency in the extraction approach both within and across studies, a central consideration was also to ensure that crucial contextual information within each study, was not lost during this process (Fu et al., 2016).  To address this and as proposed by (Booth et al., 2016), the process of data extraction was approached iteratively and required each individual study to be carefully read and re-read often multiple times.  This also enabled the researcher to become fully acclimatised to the body of evidence as a whole and provided vital preparation for the next stage of the review process – synthesising and analysing extracted data.

3.3.5 Data synthesis and analysis

Despite the importance and value attributed to reviews of qualitative research, synthesising and analysing qualitative research studies is both a complex and contested process (Thomas and Harden, 2008).   Fundamentally qualitative synthesis is about making structured judgements and is therefore subjective in nature, recognised by the argument that *“two readers who independently engage deeply with the same text are likely to come to different conclusions”* (Bearman and Dawson, 2013, p.253).  Despite this, and the potential for inherent reviewer bias, the process of synthesis and analysis is crucial in order to offer *“novel interpretations of findings”* (Thorne et al., 2004, p.1358), within and across qualitative studies and achieve a collective understanding of a particular phenomenon (Bearman and Dawson, 2013).

Approaches to qualitative synthesis and analysis are required to *“understand and transfer ideas, concepts and metaphors across different studies”* (Britten et al., 2002, p.210). To address this requirement, an extensive range of approaches exist for synthesising and analysing qualitative research findings (Booth et al., 2016).  Given its perceived accessibility especially for those with limited experience of conducting qualitative reviews (Personal Communication, 2017 - Dr Andrew Booth, ScHARR, The University of Sheffield), and its particular use in reviews regarding people’s perspectives and experiences (Thomas and Harden, 2008), thematic synthesis was chosen as the most appropriate approach for this review.

Thematic synthesis is based on thematic analysis (Braun and Clarke, 2006), an analytical method used in primary qualitative research.  The purpose of thematic synthesis is to *“bring together and integrate the findings of multiple qualitative studies within systematic reviews”* (Booth et al., 2016, p.227) by looking for recurring ‘themes’ or ‘constructs’ that lie in or across individual qualitative studies (Grant and Booth, 2009). For the purpose of this review, the aim was to utilise the thematic synthesis to highlight repetitive findings across the body of evidence obtained and where appropriate develop new interpretations not previously identified within individual primary studies.

The process of conducting the thematic synthesis for this review was guided by the work of Thomas and Harden (2008). They proposed three crucial and often overlapping stages for synthesising and analysing a body or collection of qualitative literature:

1. Coding of text ‘line-by-line’ of findings from primary qualitative studies
2. Organising resultant codes into related areas to construct ‘descriptive themes’
3. Generating ‘analytical themes’ on the basis of the developed descriptive themes

*Stage 1*

Having completed the process of data extraction and quality assessment, all included studies were imported into qualitative analysis software - NVivo 11 (QSR International, 2015).  Following this, all text within the results section of each included study related to perspectives of interest (e.g. headteachers) was inductively and manually coded line-by-line.

Individual sentences were often coded multiple times and the process of coding was iterative in nature requiring each code, corresponding text and wider context within the study results to be re-examined according to its meaning and content (Thomas and Harden, 2008).  In total 56 codes were established.  At the point of completing this stage each study was re-read in NVivo, with all contained codes highlighted and labelled, in order to check for coding consistency across the texts.

Stage 2

All codes were assessed for similarity and differences and those which were perceived to relate to one another within the bank of initially developed codes were grouped by new broader codes, i.e. into an organisational hierarchy.  Having reflected upon the hierarchical layers of codes, and as per the methods described by (Thomas and Harden, 2008), descriptive overarching themes and subthemes were identified.  Again, this was an iterative process, with the groupings of codes revisited to ensure consistency of interpretation and comprehensiveness.

Stage 3

Having formulated a list of descriptive themes, a visual map was developed (within NVivo) to explore the relationship between resultant descriptive themes and subthemes.  Descriptive themes were then considered in light of the review question, i.e. how do the descriptive themes address or answer the below -

*‘What are headteachers’ and chairs of governors’ perspectives on childhood or adolescent obesity and its prevention in school settings?’*

The reviewer then attempted to identify cross-cutting analytical themes by revising and combining descriptive themes in order to enable interpretations to go beyond the original findings of the primary studies included.  This stage is argued to be the most controversial given the subjective judgement required of reviewers (Thomas and Harden, 2008). Resulting from this final stage was four final themes and a larger number of subthemes.

**3.4 Review results**

3.4.1 Study selection

In total the initial searches produced 878 records, which after the duplicates were removed resulted in 668 records progressing to the point of screening.  The titles and abstracts of all 668 records were practically screened (Okoli, 2015), i.e. using a robust yet overly inclusive approach.  This process led to 18 studies in full-text form being reviewed and assessed against the explicit inclusion and exclusion criteria presented earlier in table 3.3.

Prior to formal selection of the final studies, the references and citations of all 18 potentially eligible studies were checked for relevance, with three further studies of interest identified.  In total, 6 qualitative empirical studies were found to be relevant and were selected for final inclusion in the review.  Figure 2 presents the process of study selection as a PRISMA flow diagram (Moher et al., 2009).

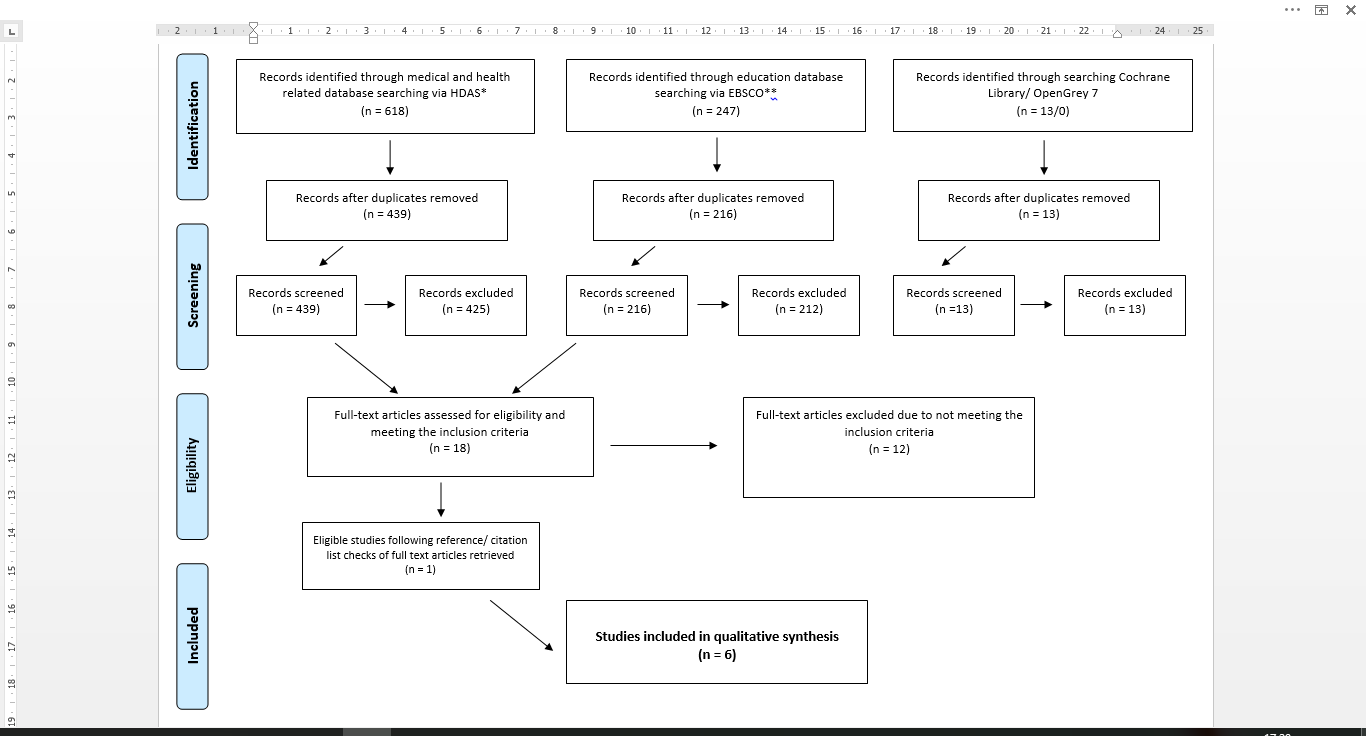


Figure 2 - PRISMA diagram (Moher et al., 2009) of searching for and selecting studies

3.4.2 Characteristics of included studies

Presented in table 3.4, is a summary of the characteristics of the six empirical peer-reviewed studies included within this review.  The six articles selected were published between 2007 and 2015 and of the six, three were based in the UK (Clarke et al., 2015; Howard-Drake and Halliday, 2015; Todd et al., 2015), two within the USA (Nollen et al., 2007; Tripp and Choi, 2014) and one in Botswana (Shaibu et al., 2012).  Half of the studies were based in a primary school context (Clarke et al., 2015; Howard-Drake and Halliday, 2015; Todd et al., 2015) , two in a secondary school context (Nollen et al., 2007; Shaibu et al., 2012) and one study representing settings from each educational level (Tripp and Choi, 2014).

Out of the six included studies, five explicitly referenced the word ‘obesity’ within their article title.  The remaining study (Todd et al., 2015) whilst exploring headteachers’ perspectives on childhood obesity within the article, referred only to ‘child health’ in their title. Aside from one study (Howard-Drake and Halliday, 2015) where the sample was made up entirely of headteachers, the remaining studies featured headteachers’ perspectives within a wider sample of school stakeholders, i.e. Deputy headteachers, teachers, Healthy school co-ordinators and parents.

Table 3.4 - Summary of the ten selected qualitative research studies (presented in descending chronological order)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Study details**  (i.e. Title, author, year of publication) | **Study Aim(s)** | **Study Context**  (i.e. Setting and location) | **Study population**  (i.e. participant role type or gender) | **Study data collection method** | **Study data analysis method** |
| Obesity prevention in English primary schools: headteacher perspectives  (Clarke et al., 2015) | Explore the views of headteachers’ from a wide range of schools, on the role of primary schools in preventing obesity. | Primary schools  UK | *22 Participants -*  15 Headteachers  (5 Male / 10 Female)  7 Deputy Headteachers  (2 Male / 5 Female) | Semi-structured interviews | Framework analysis |
| Headteachers' prior beliefs on child health and their engagement in school based health interventions: A qualitative study  (Todd et al., 2015) | Explore headteachers’ views on child health and explore how these views may interfere with addressing health concerns of pupils within their school. | Primary schools  UK | *19 participants -*  16 Headteachers  1 Deputy Headteachers  2 Healthy schools co-ordinators  (7 Males / 12 Females) | Semi-structured  interviews | Thematic analysis |
| Exploring primary school headteachers’ perspectives on the barriers and facilitators of preventing childhood obesity  (Howard-Drake and Halliday, 2015) | Explore primary school headteachers’ views on childhood obesity and more specifically understanding their perceptions on the barriers and facilitators of preventing childhood obesity in primary school settings. | Primary schools,  UK | *14 Participants -*  14 Headteachers  (2 Males / 12 Females) | Semi-structured interviews | Thematic analysis |
| **Study details**  (i.e. Title, author, year of publication) | **Study Aim(s)** | **Study Context**  (i.e. Setting and location) | **Study population**  (i.e. participant role type or gender) | **Study data collection method** | **Study data analysis method** |
| Perceptions of Childhood Obesity Among Rural Parents, Teachers, and School Administrators  (Tripp and Choi, 2014) | Describe perceptions related to childhood obesity of rural parents, teachers, and school administrators and to examine how their perceptions shape their choices and behaviours for children’s eating and physical exercise. | Mixed school education levels,  USA | *114 Participants -*  74 Parents  33 Teachers  4 School administrators (i.e. headteachers  3 District administrators | Semi-structured Interviews (with school and district administrators)  Focus groups (with parents and teachers) | Grounded theory approach |
| Adolescent Obesity Prevention in Botswana: Beliefs and Recommendations of School  Personnel  (Shaibu et al., 2012) | Exploration of student, parent,  and school personnel’s views on overweight/obesity, dietary  habits, physical activity, and body image | Secondary schools,  Botswana | *18 Participants -*  6 School administrators  6 Physical education teachers  6 School food vendor managers | Semi structured interviews | Qualitative- Directed content  analysis |
| The school food environment and adolescent obesity: qualitative insights from high school principals and food service personnel  (Nollen et al., 2007) | Examine high school personnel's perceptions of the school environment, its impact on obesity, and the potential impact of legislation regulating schools' food/beverage offerings. | High schools (secondary level education),  USA | *15 Participants -*  8 School principals (i.e. headteachers)  7 Dietician/food service managers | Semi structured interviews | Grounded theory approach |

No empirical peer-reviewed study, either at a primary or secondary school level could be identified which focused on or included the perspectives of any school governors regarding childhood or adolescent obesity.  Each of the included studies provided differing levels of information regarding the demographic profile of participants, with all stating participant role type, i.e. headteacher or deputy headteacher, but only three stating the gender of participants (all UK based).

Five of the six selected articles utilised semi-structured interviews as their method for data collection, with one study employing both semi-structured interviews and focus groups (Tripp and Choi, 2014).  Across the six studies a variety of approaches were reported for analysing resultant qualitative data, including thematic analysis (Howard-Drake and Halliday, 2015; Todd et al., 2015), framework analysis (Clarke et al., 2015), grounded theory (Nollen et al., 2007; Tripp and Choi, 2014) and qualitative-directed content analysis (Shaibu et al., 2012).

3.4.3 Results of quality assessment

As previously detailed in section 3.3.3, the Critical Appraisal Skills Programme checklist for qualitative research (Critical Appraisal Skills Programme (CASP), 2014) was employed to assess the quality of the each individual study included in the review.  Table 3.5, presents the outcomes of this critical appraisal process, in relation to the ten questions posed within the CASP checklist (see Appendix D).

Broadly speaking, the overall quality of the six studies was considered to be good.  Each study clearly articulated a research aim, in addition to justifying the importance of the research topic of focus.  Across the body of literature included, the adoption of a qualitative methodology and the chosen research design and data collection methods appeared to be appropriate given the specified aim.  Although none of the six studies, discussed in depth the reasoning or theoretical basis behind the chosen methodology and data collection methods.  All but one study (Shaibu et al., 2012) referenced that their research had required an ethics application to be submitted and approved.

All studies reported their approach to participant recruitment, detailing to varying degrees the steps undertaken to purposively identify, select and recruit the study sample.  No reflections were offered across the studies to account for the reasons why some potential participants didn’t respond or declined the invitation to participate.  Irrespective of this, the approaches undertaken, appeared to be in the main appropriate given the respective aims and purpose of each individual study.  Each of the six articles explicitly referenced the methods employed for data collection within their study.  It was clear across the board, how methods were conducted and the form the data was obtained in, i.e. audio-recordings, interviewer notes.

A major weakness of all six studies was the inability to identify the level of consideration given to the relationship between researcher and participant.  Across the included literature, there lacked any detailed discussion of potential biases introduced by the researcher(s) during the development of research questions, the process of sampling, recruitment or the choice of research setting.  Whilst one study offered minimal reflection on the potential bias introduced by the researcher’s professional role (Howard-Drake and Halliday, 2015), this was not described in any depth.  Given that none of the six met this criteria, it is important to reflect on the appropriateness of this checklist question for the type of studies included. With strict word limits often prescribed for academic article submissions, omitting a detailed account of potential biases introduced by the researcher may be for brevity.

In relation to the data analysis and resultant findings, all but one study (Tripp and Choi, 2014), met the CASP criteria (Critical Appraisal Skills Programme (CASP), 2014) for indicating analysis had been sufficiently rigorous and providing a clear statement of findings.  Each provided a description of how the study data was analysed and referenced relevant academic texts to indicate the processes undertaken.  Three studies discussed having more than one analyst (Nollen et al., 2007; Clarke et al., 2015; Todd et al., 2015), one study referenced the use of participant validation, employed to reduce potential bias in the data analysis process (Todd et al., 2015).  Aside from one study (Tripp and Choi, 2014), study data (i.e. verbatim quotations) was utilised in the remaining five studies to support the findings claimed.  Although meeting the criteria, a minimal amount of data was utilised in one study (Nollen et al., 2007), to illustrate or illuminate the author's interpretations.  All studies articulated within their discussion or conclusion chapters how their respective research contributes to existing knowledge or understanding of the topic.

Table 3.5 – Summary of completed quality assessments on included studies

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Clear statement?** | **Method appropriate**  **?** | **Research design appropriate?** | **Recruitment strategy appropriate**  **?** | **Data collection appropriate?** | **Relationship adequately considered ?** | **Ethical issues considered?** | **Data analysis rigorous ?** | **Clear findings**  **?** | **Research valuable**  **?** |
| Obesity prevention in English primary schools: headteacher perspectives  (Clarke et al., 2015) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Headteachers' prior beliefs on child health and their engagement in school based health interventions: A qualitative study  (Todd et al., 2015) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Exploring primary school headteachers’ perspectives on the barriers and facilitators of preventing childhood obesity  (Howard-Drake and Halliday, 2015) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Perceptions of Childhood Obesity Among Rural Parents, Teachers, and School Administrators  (Tripp and Choi, 2014) | Yes | Yes | Yes | Yes | Yes | Can’t tell | Yes | Can’t tell | Yes | Yes |
| Adolescent Obesity Prevention in Botswana: Beliefs and Recommendations of School Personnel  (Shaibu et al., 2012) | Yes | Yes | Yes | Yes | Yes | Can’t tell | Can’t tell | Yes | Yes | Yes |
| The school food environment and adolescent obesity: qualitative insights from high school principals and food service personnel  (Nollen et al., 2007) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

3.4.4 Key findings from the thematic synthesis

The remainder of this chapter presents the findings from the thematic synthesis.  Four overarching themes and a larger number of sub-themes (nine) emerged from the three stage process undertaken (Thomas and Harden, 2008).  The four themes are - 1) Existence of childhood obesity, 2) The school setting 3) Constraining factors and 4) Enabling factors.  Table 3.6, presents each of the themes and respective sub-themes, in addition to providing supporting data (i.e. verbatim quotations) directly obtained from the primary studies.  The term ‘headteacher’ will be utilised throughout the narrative below to encapsulate all variations of this school leadership role, i.e. School Principal or School Administrator.

3.4.4.1 Theme 1 – Existence of childhood obesity

This first theme discusses headteachers’ perceptions of childhood obesity in relation to its scale within their school setting and explores the views regarding socio-economic differences in both obesity and associated lifestyle behaviours.

*Perceived prevalence*

Significant variation existed between study participants regarding the perceived scale of childhood and adolescent obesity within their respective school setting.  Whilst some headteachers recognised that childhood obesity was a growing issue, broadly speaking this was perceived as the exception not the rule with only a minority of children affected.  Furthermore, headteachers predominantly in the UK raised concerns regarding the disparity they believed to exist between the reported significant scale of childhood obesity (i.e. through the National Child Measurement Programme), and the perceived lower prevalence within their own school pupil population.  This view however was not shared by all, with other headteachers albeit a smaller proportion from different contexts observing increasing proportions of overweight or obese children and adolescence.

Headteachers identified a range of lifestyle behaviours or wider health issues they perceived their school pupils exhibit or experience.  Whilst some of the behaviours or issues reported were believed to directly relate to a child or adolescent’s weight status, i.e. food intake, others were indirectly implicated either resulting from or contributing to the existence of obesity, i.e. low self-esteem.

Table 3.6 - Illustrative findings related to each theme and subtheme

|  |  |  |
| --- | --- | --- |
| **Theme** | **Subtheme** | **Participants quotations from primary study (reference)** |
| Existence of childhood obesity | Perceived prevalence | *“I don’t think it is an absolute priority for us, but I’d say in every year group/in every class there’s probably one or two children who are signiﬁcantly overweight”.* *(Clarke et al, 2015)*  *“I could never work out where the government get their ﬁgures from for the number this high proportion of children that are supposed to be fat slobs because yes we’ve got a few children who are physically overweight, but it’s not a signiﬁcant number, no more than one or two in each class, but they talk, what a third of children are obese aren’t they?”* *(Howard-Drake and Halliday, 2015)*  *“We’ve still got lots of children here who are unfit and unhealthy you know, I think, I’m sure the school nurse will tell you when it comes to the centres of younger children coming into school with regard to their weight, we see lots of children who’re very, very large children who obviously aren’t living very healthy lifestyles at home.” (Todd et al, 2015)* |
| Socio-economic differences | *“Some of it is linked to choices that families make and maybe understanding of what is a healthy diet. . . more so probably is the link to how much income families have”.* (Clarke et al, 2015)”  *“Poorer the families are, the more they gravitate towards cheap food”.* (Howard-Drake and Halliday, 2015)  *‘‘The more income people have ... the more they tend to eat the rubbish…how many pizza deliveries, things parents send for their children ... and Kentucky chicken.’’* (Shaibu et al, 2011)  *“..I think that there is a disadvantage in being in a so-called ‘affluent’ area, because obviously children who come from professional working families there perhaps is less time if you like there, it’s not a financial aspect, difficulty, but there are different pressures and different challenges”.* (Todd et al, 2015) |
| The school setting | Healthy behaviours and learning | *“I think healthier children are more switched on to their learning and they seem more enthusiastic and more willing to work hard and be independent and engage with the learning”.* (Clarke et al, 2015)  *"The approach we've always tried to take is when it (mental and physical health) becomes an issue and effects the other three (learning environment, academic environment, discipline) we get involved...they've all got to fit together...I don't think you can zero in on any one without looking at the big picture."* (Nollen et al, 2007) |
| Preventative action | *“Something I’ve seen before which I thought was really useful…was the whole school involved in ten minutes of activity at the same time each day…it meant that sort of midway through the morning the children were being fired up again, we know that it sort of re-sparks the brain and what have you”.*  (Todd et al, 2015) |
| Role modelling | *“We get involved and I think that’s part of the secret here, the children don’t see us just standing there and watching. . . we’re in a canoe, we’re up a wall, we’re in the mud, and it’s fun”* (Clarke et al, 2015)  *“Even though I’m a bit big, I wouldn’t ask the children to do anything I wouldn’t participate in myself.”*  (Howard-Drake and Halliday, 2015) |
| Constraining factors | Parents | *"The school should be a part of what's going on, I just don't think we should be looked at as the saviour to any particular social issue... I think we need to be a part of it, but don't look to us to solve all of those problems. I think we act as parents way too much."* (Nollen et al, 2007)  *“My wife worked the other side of town and, as she said, ‘We give them breakfast, we teach them how to brush their teeth, we teach them what fruit is and how to eat it, we teach them how to hold a knife and fork. We’ll be the one there before long in getting them out of the bed and dressing them’. That’s not to say that the things that we do in school are not important, but surely there’s a partnership?”* (Todd et al, 2015) |
| Academic priorities | *“If this was my school and I was able to run it in any way I wanted to…a bigger part of their education would be healthy eating and active lifestyles. I can only do it minimally because of the government agenda. . . which has to be the ultimate priority otherwise I get into trouble”* (Clarke et al, 2015)  *“I keep going back to my core purpose is to educate and I can try and take on all the ills of society, but I need them to grow up reading and writing”.* (Howard-Drake and Halliday, 2015) |
| Enabling factors | External partners | *“I’ve got an IT specialist, I’ve got a top notch caretaker, I’ve got a ﬁrst class bursar, I’m going to have a sports coach, I’ve got an attendance ofﬁcer and if we got a healthy person, school nurse, you know, it’d be brilliant wouldn’t it?”* (Clarke et al, 2015) |
| School leadership | *“Because I’m determined to do it, I want to do it ... there are the other academic pressures, so if you’re not absolutely determined it’s one of those things you could let slip as it’s not really your core purpose”* (Howard-Drake and Halliday, 2015) |

Concern was expressed regarding the perception that children and adolescents increasingly have unhealthy dietary habits and disproportionately engage in sedentary behaviour.  Furthermore, headteachers, particularly from UK primary schools, discussed a perceived escalating issue with child mental health and emotional well-being.

*Socio-economic differences*

A recurring pattern within the analysed findings regardless of the research setting, was the view that both obesity prevalence and associated lifestyle behaviours differed according to the socio-economic status of children and their families.  Whilst the commonly shared view was that differences existed, the direction of this difference varied amongst headteachers.  In the most part, headteachers believed that increasing deprivation was associated with poorer diets, physical inactivity and excess weight status.  This was broadly attributed to the perceived impact of low incomes on being able to make healthy choices, i.e. purchasing nutritious food or engaging in extra-curricular activities.  Furthermore, families from lower socioeconomic backgrounds were generally believed to have less understanding regarding how, what and why to make particular decisions regarding health and well-being, e.g. adopting a healthy diet.

Paradoxically, this view was contradicted by those headteachers who associated increasing affluence with increasing prevalence of obesity and in particular unhealthy dietary habits.  For some this related to affluent families having greater financial resources to purchase unhealthy fast foods, whilst for others the connection was drawn between pressured professional lives and having limited available time.

3.4.4.2 Theme two - The school setting

The second theme, examines headteachers’ views regarding their school’s role in preventing excess weight gain during childhood and adolescence.  Three recurring patterns emerged related to a school’s role in prevention. Firstly the belief by headteachers that a relationship exists between the lifestyle behaviours and learning outcomes; secondly, that a school undertakes a variety of actions which contribute to obesity prevention and finally that within the school setting, role modelling is an important influencing factor for preventative action.

*Lifestyle behaviours and learning outcomes*

In the main, headteachers perceived that the lifestyle behaviours and the resultant health status of children and adolescents impacted on their ability to learn.  The general perception was that the health of a child and their learning outcomes are intrinsically linked, with some placing significant emphasis on the importance of both physical and mental health.  Headteachers therefore proposed the concept of the ‘whole child’ and discussed that schools play a vital role in the holistic development of children and adolescents.  Particularly crucial for some headteachers, was the recognition of the positive influence that healthy eating and increasing physical activity levels has on pupil concentration levels, engagement and ability to learn within the school environment. In addition, for those children and adolescents adopting healthier dietary habits and participating in physical activity opportunities, improvements were identified in pupil self-esteem and wider emotional wellbeing.

The understanding that a relationship exists between health, learning and ultimately academic outcomes, was a key driver for headteachers and their schools in taking action to improve lifestyle behaviours.  Despite this, significant concerns were raised by some about whether the school should actually be prioritising the improvement of children’s physical and mental health given that their fundamental purpose is to educate and support pupil academic achievement.  Some highlighted an issue with the fact that an excessive focus on activity outside of their core remit, could impact upon their school's capacity for teaching and learning.

*Preventative action*

Universally, headteachers provided an extensive range of examples related to the provision of opportunities within a primary and secondary school setting, which could contribute to prevention of excess weight and improve child health.  Driven for some by specific school health policies, reference was made to their school’s use of the curriculum to deliver key health messages and the provision of extracurricular activities (e.g. cooking classes and sports clubs), to promote healthy lifestyles.  Disparity was evident between different schools approaches to creating healthy food environments.  Headteachers from the UK perceived a key part of a school's role in the prevention of childhood obesity, was ensuring the provision of healthy school food as part of school lunches and breakfast clubs.  Headteachers from Botswana in comparison, expressed significant concern regarding the poor availability of healthy foods in their schools and the over the use by pupils of in-school tuck shops (selling predominantly unhealthy foods).

For some, as opposed to disparate activities or action within their school, providing health enhancing opportunities was better achieved through the adoption of a whole school approach or specific health policies.  Rather than formally preventing obesity, headteachers particularly in primary school settings felt that holistic approaches where the aim was to improve lifestyle behaviours across the school, better supports their ability to fulfil their perceived moral responsibility of developing the whole child.

*Role modelling*

As part of the perceived role of a school in preventing childhood obesity, was the view that school staff including headteachers themselves should set a positive example in respect to the lifestyle behaviours they exhibit.  Headteachers frequently referred to the importance of school staff setting a good example throughout the school setting including during school lunches and through participation in healthy activities, i.e. extra-curricular sessions.

Despite this, headteachers within the UK and Botswana particularly, indicated concern over the unhealthy lifestyle behaviours and excess weight status of both school staff and themselves as school leaders.  For some, it was perceived that the credibility of the health messages being promoted to both pupils and parents could be affected by inappropriate or poor role modelling.  The sensitive nature of obesity and the risk of stigmatising individuals within a school setting, meant that some headteachers felt unable to have open discussions about it.

3.4.4.3 Theme 3 - Constraining factors

The third theme, presents within two subthemes the factors commonly identified within the findings which appear to constrain a school's ability or desire to prevent childhood obesity namely 1) parents and the home environment and 2) school pressures and priorities.

*Parents*

Universally headteachers from all contexts referenced the important influence of parents and the home environment on whether and how their school is able to achieve a meaningful impact on the prevention of excess weight during childhood and adolescence.  Parents were perceived to have the greatest responsibility for ensuring their children maintain a healthy weight, with headteachers viewing their school should play a supportive role.  Reference was made to the positive engagement achieved with some parents on improving children’s lifestyle behaviours, however across the board, headteachers in both primary and secondary level schools frequently expressed the belief that some parents were not fulfilling their responsibility especially in respect to childhood obesity.  Consequently, significant concerns were raised about schools increasingly having to act as parents in respects to both the perceived basic health needs of children, i.e. providing breakfasts and in relation to the provision of health enhancing opportunities, i.e. access to physical activity sessions.

A multitude of factors were discussed by headteachers, which were deemed to affect whether or how parents fulfil their responsibility for improving their children’s lifestyle behaviours and resultant weight status.  Limited familial income or parental knowledge regarding what constitutes healthy behaviours was referenced by some, particularly in areas of deprivation.  However for others, poor parenting was identified as the reason for diminishing parental responsibility, where allowing children to engage in unhealthy dietary habits and sedentary behaviour was simply viewed as an easier option.

Overall, these challenges meant that headteachers felt their ability to effectively prevent childhood obesity was constrained and the consistency of key health promoting messages between the school, pupils and parents hindered.  Despite this, given the perception that certain pupils wouldn’t get the opportunity outside of the school setting to engage in healthy lifestyles, for some headteachers it meant they proactively took on an even greater level of responsibility for child health and well-being.

*Academic priorities*

A recurring pattern across all findings reviewed was the challenge of balancing school priorities, namely academic and educational with non-mandatory, non-assessed activity, i.e. related to health and well-being.  Limited internal capacity, reducing resources and increasing governmental pressures in respect to academic targets, were viewed to be constraining schools ability to comprehensively focus on the wider development issues of children and adolescents.  Despite the widely held belief as previously discussed, that health and lifestyle behaviours impacts on a pupil’s ability to learn, the explicit and enduring focus on academic achievement both in primary and secondary school environments, means that headteachers felt tied to what they can realistically achieve with issues such as preventing childhood obesity.

For some however, a perception remained that schools had increasingly taken on greater responsibility for areas such as improving healthy lifestyle behaviours and consequently there was a risk of this being done at the sacrifice of learning and teaching.

3.4.4.4 Theme 4 - Enabling factors

The fourth and final theme, presents within two subthemes the factors commonly identified within the findings which relate to factors enabling a school's ability or desire to prevent childhood obesity namely 1) external partners and 2) effective school leadership.

*External partners*

Across all settings, a wide range of partners or partnerships were identified, which were argued to provide schools with effective support for preventing excess weight in childhood and adolescence.  Despite headteachers particularly in a UK context identifying that funding cuts to services or programmes such as ‘Healthy Schools’, had hindered their school’s preventative action, the importance of partnership working, was still perceived to be essential given the complexity and sensitivity of childhood obesity as a public health issue.

In addition, given that school staff often lacked the time, knowledge, skills or confidence to run health promotion activities, having external partners come into a school environment was an important way to gain additional capacity and ensure the consistency and credibility of key health promotion messages.  However for a minority of schools, where the improvement of healthy lifestyle behaviours was highly prioritised, school staff were expected to deliver out of school activities to children.

Although accessibility issues were raised, of the external partners referenced, school nurses were particularly regarded by headteachers, as being crucial for engaging not only with pupils, but acting as a bridge between the parents and school as well.

*School leadership*

A further enabling factor determining whether or how a school engages in the obesity prevention agenda, was proposed by headteachers as the importance of leadership. Some expressed that their own personal values and approach to leadership regarding the prioritisation of child health could alleviate some of the constraining factors identified.

For these headteachers, they perceived they were able to determine the school culture regarding the promotion of health and this stemmed from their passion or interest in improving the lifestyle behaviours and wider health and wellbeing of children at their school.

**3.5 Discussion**

The aim of this review was to systematically identify and synthesise the research literature concerning ‘*headteachers’ and chairs of governors’ perspectives on childhood or adolescent obesity and its prevention in school settings’*.

Six qualitative empirical studies were identified, with a thematic synthesis conducted on the primary data contained. Resulting from this process was the emergence of four cross-cutting themes and nine associated sub-themes.

The review confirmed that headteachers within primary and secondary schools are aware of the issue of childhood and adolescent obesity, however generally don’t perceive the scale of the problem within their own school setting to be of significant concern.  Headteachers did identify an escalating issue in children and adolescence relating to unhealthy lifestyle behaviours (i.e. unhealthy dietary habits) and wider health issues (i.e. mental health).  Participants across all studies reviewed, commonly shared the belief that the existence of obesity, unhealthy dietary habits and sedentary behaviour differed according to the socio-economic status of children and families.  Although in the main poorer health behaviours and outcomes were associated with lower income families, for some the reverse was true in relation to increasing affluence and poorer lifestyle choices.

The review identified that headteachers across the board believed that their schools had a role to play in the prevention of childhood obesity.  A factor driving this belief was the perception that a child or adolescent's health was linked to their ability to learn.  Consequently, headteachers identified the academic benefits of taking action to improve children and adolescents lifestyle behaviours, i.e. healthy eating and physical activity uptake.  Concern was raised however about whether too much of an emphasis on fulfilling the role of preventing childhood obesity would detract from a school’s core purpose of education.  Despite this, headteachers provided extensive examples of their school’s action in improving the dietary habits and physical activity levels of children.  Provision of health enhancing opportunities was evidenced both inside and outside of the curriculum, involving both pupils, school staff and parents.  An issue raised by some headteachers, was the potential influence of positive or negative role models within a school setting, related to both school staff and headteachers themselves.

A strong recurring pattern within the review was the view shared extensively across study findings, that parents play the most decisive role in children and adolescents’ health and well-being and at times are a significant constraining factor in the prevention of obesity in school settings.  Universally parents were believed to have the greatest responsibility for preventing childhood and adolescent obesity and whilst some were fulfilling this, the opinion was that others were negating their parental duties.  This was attributed to lack of knowledge and resources relating to healthy choices, although in some instances poor parenting skills were identified.

The review highlighted that the second most significant constraining factor for school based preventative action, related to the increasing pressure for schools to meeting academic targets.  This was identified as reducing the capacity and resources available to prioritise other aspects of child development including health and well-being.  For some this resulted in a conflict between what headteachers would ideally like to achieve in relation to balancing the needs of the whole child, and what realistically they were able to given the constraints primarily driven by government.  However there were significant concerns identified within the findings from those headteachers who felt it was inappropriate for schools to have a greater level of responsibility in preventing childhood obesity, given that their fundamental purpose is to educate children and adolescents.

The final theme within the review, revealed that enabling factors exist, which headteachers believed do or would facilitate their ability and desire for their school based obesity prevention.  Commonly, engaging with external partners was viewed as an effective approach to increase capacity, consistency and credibility for health promotion messages.  Whilst funding and accessibility issues with key services such as school nurses were identified, headteachers broadly felt these partners are crucial for engaging with both pupils and parents on the complex and sensitive issue of obesity.  Finally, despite the constraining factors identified, headteachers across the studies reviewed believed that their own leadership, values and passion could support the continued action to improving child and adolescent lifestyle behaviours and therefore the prevention of obesity.

3.5.1 Limitations

A number of limitations exist related to both the methods and outcome of this systematic review and qualitative synthesis.  Firstly, in relation to the searches, whilst a comprehensive and robust approach was utilised to identify literature, some relevant studies may have been missed in the search.  Similarly, despite the systematic steps employed to screen studies of interest, eligible studies could have been inappropriately excluded from the final review.  In addition, the decision to exclude unpublished non-peer reviewed literature may have restricted the range of perspectives obtained.

There was no access to the original data set of the primary studies and for some, either no raw data (i.e. participant verbatim quotations) was included or it was limited.  Consequently, it is important to reflect on the fact that this review is a synthesis of study authors analyses and interpretations of their own data sets.

A key limitation of this review is the fact that whilst the explicit views of headteachers were sought and synthesised in each of the primary studies reviewed, it is important to note that for some studies, ‘headteachers’ was a term utilised to reflect a wider sample of school stakeholders, i.e. inclusive of deputy-headteachers.  Furthermore, study authors at times proposed findings or interpretations of their study population as a whole (not only related to headteachers’ beliefs).  These issues therefore has the potential to limit the relevance of the overall interpretations drawn from the thematic synthesis.

In addition, across the six studies reviewed, 66 headteachers were included from both primary and secondary school settings in a UK and non-UK location.  Despite the variety of the participant and school demographics included, it essential to reflect on the fact that the views obtained are context specific and cannot be seen as representative of the population of interest.  Furthermore, although headteachers’ views were included in these studies, secondary school headteachers (from the UK) and governors or chairs of governors (both UK and non UK) were identified as missing from the evidence base.

**3.6 Conclusion and recommendations for further research**

In spite of the limitations identified, this qualitative review and thematic synthesis is the first time school headteachers’ perspectives regarding childhood or adolescent obesity have been collectively synthesised and analysed.  Whilst not attempting to claim representativeness, the findings do however provide useful insights, which can contribute to answering both the review question and overarching research question for the PhD.  The review has also highlighted the need for further research into headteachers’ and chairs of governors’ views more broadly, but particularly at a secondary school level in the UK, where their views were not accounted for.  This gap in the research and the justified importance of these key stakeholders as detailed in chapter two, has confirmed the appropriateness of the research focus for the doctoral study.  Prior to articulating the methods employed to address the paucity of literature related to this topic and population of interest, the overarching research question, aims and objectives have been re-stated below -

**3.7 Research question, aims and objectives**

**Research question**

What are headteachers’ and chairs of governors’ perspectives on adolescent obesity and its prevention in English secondary school settings?

**Research aims**

For each phase of the mixed methods study, two distinct aims and related objectives exist.

Aim 1

Within an initial and core qualitative phase of the research, explore and understand in-depth headteachers’ and chairs of governors’ views and experiences of adolescent obesity and its prevention in English secondary school settings

*Aim 1 Objectives*

* Conduct a systematic review and qualitative synthesis in order to position the research question within existing literature and inform the approach to qualitative data collection
* Undertake semi-structured face to face interviews with headteachers and chairs of governors in England
* Develop and utilise an interview schedule that will enable an in-depth exploration and discussion with interview participants on the following topics -
* Childhood and adolescent obesity causation and consequences
* Types of activity or action undertaken in secondary school settings that contributes to preventing childhood obesity
* Roles of schools, headteachers and chairs of governors in preventing childhood obesity in secondary schools
* The barriers and facilitators of preventing childhood obesity in secondary schools
* Conduct a thematic analysis of the collected interview data, in order to generate a cohesive narrative of the qualitative findings

Aim 2

Within a supplementary quantitative research phase and in order to determine the relevance of the qualitative findings outside of their original context, conduct a descriptive cross-sectional survey, which identifies headteachers’ and chairs of governors’ opinions and attitudes towards adolescent obesity and its prevention in English secondary school settings.

*Aim 2 Objectives*

* Develop and pilot test an appropriate survey data collection tool, i.e. online questionnaire, for use with a larger sample of secondary school headteachers and chairs of governors
* Design the structure and the content of the online questionnaire around the analysed qualitative findings and resultant themes
* Distribute the pilot tested online questionnaire to the census of secondary school headteachers and chairs of governors in England
* Utilise descriptive and inferential statistics to analyse survey data and examine relationship between demographics and identified attitudes and opinions

**Chapter 4**

**Research approach and design**

**4.1 Introduction**

This chapter presents a detailed outline of the research approach and design employed.  Beginning with a broad discussion on approaches to research, the underlying philosophical assumptions from which research originates are then examined, with particular attention paid to the worldview this study is aligned to – pragmatism.  An overview of mixed methods research designs are then provided, along with a comprehensive justification for this study adopting an exploratory sequential design.

**4.2 Approaches to research**

Research approaches namely quantitative, qualitative or mixed methods (Tashakkori and Teddlie, 1998) are *“plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis and interpretation”* (Creswell, 2014, p.3). Whilst traditionally viewed as distinct and discrete, quantitative and qualitative research approaches have more recently been argued to represent poles at either end of an interactive continuum (Newman and Benz, 1998), with mixed methods covering the area in the middle (Johnson and Onwuegbuzie, 2004).  Quantitative research approaches were viewed as dominant across scientific disciplines up until the mid-20th century.  Since that point, both qualitative and more recently mixed methods research approaches have gained increasing interest and legitimacy across human and social sciences (Creswell and Plano Clark, 2011).

4.2.1 Quantitative and qualitative

Typically and simplistically, quantitative research approaches are a form of inquiry that aim to quantify the ‘objective world’, whereas in contrast, qualitative research seeks to explore the ‘experienced world’ (May, 2011; Creswell, 2014).  Utilising deduction quantitative research approaches collect and analyse data objectively, test hypotheses and theories, in order to generalize and replicate findings (Bryman, 2016).  Qualitative research in comparison, emphasises subjectivity and induction enabling individual experiences, interpretations and meanings to be sought and understood in detail and in depth (May, 2011; Bryman, 2016).  Taken from Morgan (2014), Table 4.1 presents a comparison of the key features of qualitative and quantitative research approaches.

Table 4.1 - Key features of qualitative and quantitative research approaches

|  |  |
| --- | --- |
| **Qualitative** | **Quantitative** |
| Induction    Purposes   * Generates theory from observations * Orientated to discovery, exploration   Procedures   * Emergent design * Merges data collection and analysis | Deduction    Purposes   * Tests theory through observations * Oriented to cause and effect   Procedures   * Predetermined design * Separates data collection and analysis |
| Subjectivity    Purposes   * Emphasizes meanings, interpretation * Tries to understand others’ perspectives   Procedures   * Researcher is involved, close to the data * Research is the ‘research instrument’ | Objectivity    Purposes   * Emphasizes things that can be measured * Results do not depend on beliefs   Procedures   * Researcher is detached, distant from the data * Relies on standardized protocols |
| Context    Purposes   * Emphasizes specific depth and detail * Analyses holistic systems   Procedures   * Uses a naturalistic approach * Relies on a few purposively chosen cases | Generality    Purposes   * Emphasizes generalisability and replication * Analyses variables   Procedures   * Uses experimental and statistical controls * Works across a larger number of cases |

(Source - Morgan (2014)

4.2.2 Mixed methods

Mixed methods research approaches previously referred to as the *“third methodological movement”* (Tashakkori and Teddlie, 2003, p.5), have gained increasing status and impetus over the last two decades especially within health sciences (O’Cathain et al., 2009). Defined as a procedure of *“collecting, analysing and mixing both quantitative and qualitative data within a single study or series of studies”* (Creswell and Clark, 2007, p.5), mixed methods approaches are promoted as being appropriate for answering complex research questions, that single researches approaches may not (Bowling, 2014). Distinguished from multi-method research, which uses a combination of methods to yield data of the same kind (Teddlie and Tashakkori, 2009), proponents of mixed method research advocate its ability to *“draw from the strengths and minimise the weaknesses”* of single quantitative or qualitative research studies (Johnson and Onwuegbuzie, 2004, p.14-15).

Depending on the research aims and the researcher’s beliefs and values, the rationale for adopting a mixed-methods research approach may differ (Greene, 1989). In addition, variations exist in how researchers choose to design mixed methods research, relating to the timing, weighting and connection of quantitative and qualitative parts (Creswell and Clark, 2007; Tashakkori and Teddlie, 2010).

Despite the increasing interest and application of mixed methods research approaches, the collection, analysis and integration of qualitative and quantitative research has been greatly debated (Morgan, 2007).  Single method purists argue that fundamental differences in the philosophical worldviews, designs and methods of quantitative and qualitative research approaches, mean it is inappropriate to mix them, a concept at times referred to as the incompatibility thesis (Teddlie and Tashakkori, 2009). Despite this, proponents of ‘mixing’ argue that as knowledge is both constructed and based on the reality of the world we experience, mixed methods research can offer a holistic approach, which bridges the gap between quantitative and qualitative research and their respective philosophical positions (Howe, 1988; Morgan, 1998, 2007; Leech and Onwuegbuzie, 2009; Teddlie and Tashakkori, 2009). Furthermore, mixing methods is argued to be able to accomplish things that would be challenging if not impossible, *“by operating solely within either inductive-subjective-contextual or the deductive-objective-general packages that characterise the two more traditional approaches”* (Morgan, 2014, p.58).

*Chosen research approach - mixed methods*

Upon carefully considering the proposed research question and available research approaches, it was decided that utilising a mixed methods approach would be the most appropriate for this study.  The decision to employ a mixed-methods approach was firstly based on the recognition by both the researcher and academic supervision, that employing either a quantitative or a qualitative approach would not provide the depth and breadth required to answer the proposed doctoral research question:

*‘What are headteachers’ and chairs of governors’ perspectives on adolescent obesity and its prevention in English secondary school settings?’*

Therefore, it was deemed that utilising a mixed methods approach would greater facilitate the researcher’s ability to answer the 'how', 'why', what', who', when' and 'how many' aspects of the overarching research question (Denscombe, 2008, 2009). Furthermore, the second and highly significant factor determining the selection of a mixed methods approach centred on an identified methodological need to employ both a qualitative and quantitative strand.  As discussed in the literature review (chapter three), a paucity of literature existed related to headteachers’ and chairs of governors’ perspectives on adolescent obesity and its prevention in schools.  Consequently, attempting to use a quantitative approach to address the research question would’ve been inappropriate. This is due to a lack of a pre-existing quantitative instrument, i.e. a survey or even sufficient literature to be able to develop an effective and meaningful quantitative data collection tool.  Similarly, whilst adopting a qualitative approach alone was considered, it was felt the resultant findings would only partially address the research question, aims and objectives. Furthermore, a qualitative mono-method wouldn’t have been able to confirm whether any perspectives obtained were context specific or indeed relevant across a wider cohort.

The ability and indeed necessity to therefore draw on both qualitative and quantitative approaches led to the selection of a mixed methods approach for this study.  A detailed overview of the overarching components for this mixed methods approach, i.e. the chosen philosophical worldview, research design and methodology, is presented in the remainder of this chapter and subsequent chapters five and seven.

**4.3 Components of a research approach**

A research approach whether quantitative, qualitative or mixed methods, is comprised of three overarching components; philosophical worldviews (or paradigms), research designs and research methods (Creswell and Plano Clark, 2011; Creswell, 2014). Figure 4.1 displays the ‘framework for research’ (Creswell, 2014), which details the three components and the interconnection and interaction between each.

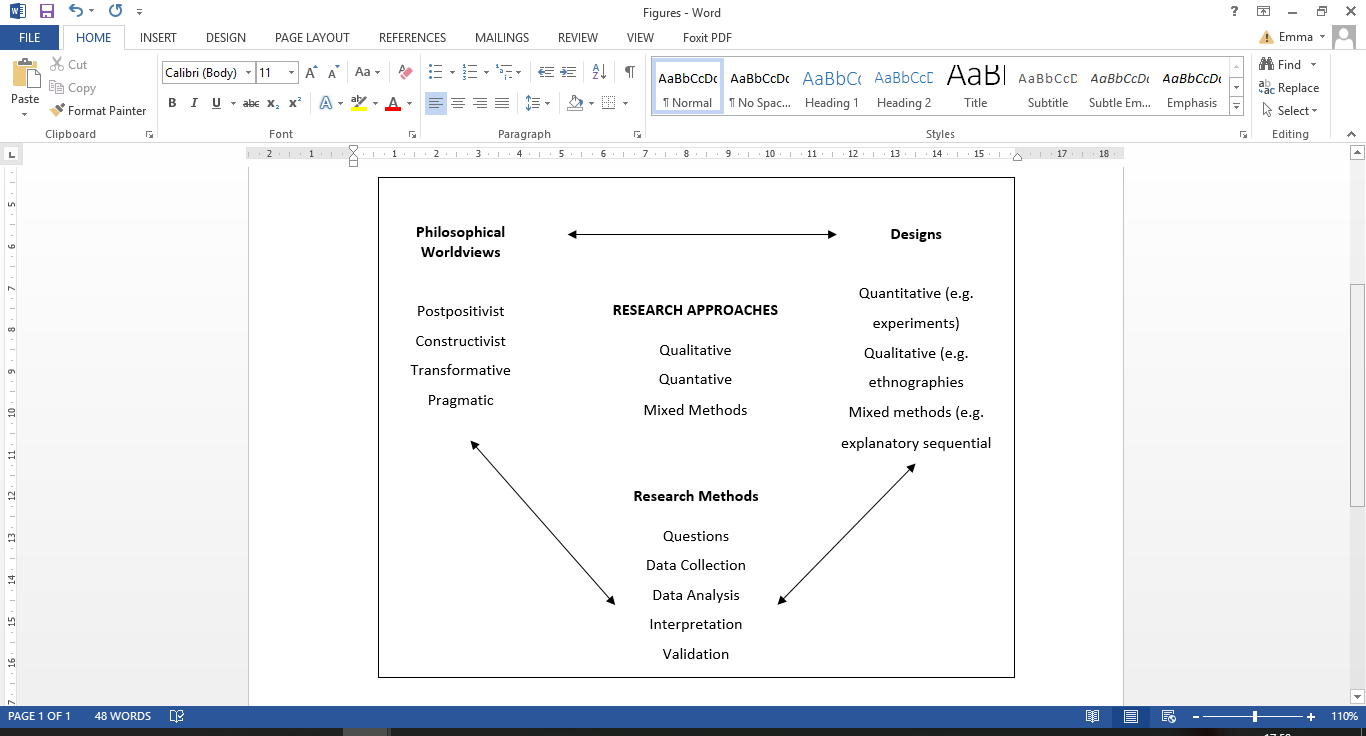


Figure 4.1 - Framework for research – the interconnection of worldviews, design and research methods (Creswell, 2014)

4.3.1 Philosophical worldview

Despite being often hidden or missing in research texts (Slife and Williams, 1995; Mackenzie and Knipe, 2006), a fundamental component of a research approach is the philosophical assumptions or worldviews, which form the foundation of research (Creswell and Plano Clark, 2011). Proposed as a basic set of beliefs or assumptions (Creswell, 1998, Guba and Lincoln, 2005; Morgan 2007), and typically referred to as ‘paradigms’, a researcher’s philosophical worldview is perceived to be inseparable from how and why a research approach, design and methods are chosen and conducted (Creswell and Plano Clark, 2011).  Therefore as each researcher brings a *“set of interlocking philosophical assumptions and stances”* (Caracelli and Greene, 1997, p.6) to their research, it is argued that researchers should reflect upon and carefully consider how their philosophical worldview shapes their research practice (Kuhn, 1962; Guba and Lincoln, 1994; Greene and Caracelli, 1997; Morgan, 2007; Clark et al., 2008; Teddlie and Tashakkori, 2009).

A researcher’s philosophical worldviews or paradigm is informed by their ontological, epistemological and methodological assumptions (Guba and Lincoln, 1994). These assumptions will guide how a researcher thinks and acts during the research process (Norton, 1999). It is important therefore, for a researcher to address a number of important questions related to these assumptions individually and collectively.  Firstly in respect to ontology, it is important to reflect upon *“what is the form and nature of reality?”*, in addition to *“what is there that can be known about?”*.  Secondly, regarding epistemology, *“What is the nature of the relationship between the knower, or would-be knower, and what can be known?”*.  Finally, the methodological question considers *“How can the inquirer go about finding out whatever he or she believes can be known?”* (Guba and Lincoln, 1994, p.108). All questions and resultant answers are viewed as interconnected, with ontological and epistemological questions identifying a researcher’s fundamental beliefs and methodological questions ascertaining the proposed methods of inquiry in order to gain knowledge (Guba and Lincoln, 1994).

Despite the argument that a researcher’s basic set of beliefs or assumptions should be reflected upon, Mackenzie and Knipe (2006) claim that a significant variation exists in the research literature related to how or even whether philosophical worldviews are referenced or discussed.  This may lead novice researchers *“to wonder where the notion of paradigm fits into the research course of action and to question its relevance”* (Mackenzie and Knipe, 2006, p.194). Furthermore, whilst research has traditionally been defined as a dichotomous division between either a positivist or constructivist paradigm (Tashakkori and Teddlie, 1998), an extensive list of philosophical worldviews exists presenting additional challenges for first time or early researcher’s seeking to gain a comprehensive, meaningful and relevant understanding (Mackenzie and Knipe, 2006).

For the purpose of this research and given their prominence in research texts, four worldviews or paradigms were selected for reflection and discussion, these include postpositivist, constructivist, transformative and pragmatist.  All four paradigms take different stances to common elements such as ontology and epistemology and these stances *“influence how researchers conduct and report their inquiries”* (Creswell and Plano Clark, 2011, p.41).

4.3.1.1 Postpositivism

The postpositivist paradigm, typically underlying quantitative research and stemming from positivism, aims to test hypotheses using scientific methodologies of observation and deductive reasoning, reducing phenomena to empirical indicators, which represent and discover truth (Sale et al., 2002; Punch, 2009; Bowling, 2014).  Holding a deterministic philosophy *“in which causes (probably) determine effects of outcomes”* (Creswell, 2014, p.7), postpositivists assume an objective reality exists that can be observed and measured in order to build verifiable and testable theories, independent of human perception and bias (Bryman, 2012; Bowling, 2014). External influences are controlled and validity and reliability are emphasised in order that any other researcher who measures the same reality obtains the same results or findings (Penn, 2008). Rejecting the central tenets of positivism, post-positivists believe that we cannot conduct research completely objectively and value free (Teddlie and Tashakkori, 2009). In addition when studying the behaviour and actions of humans *“we cannot be positive about our claims of knowledge”* (Creswell, 2014, p.7).

4.3.1.2 Constructivism

In contrast to the philosophical stance of the postpositivist paradigm, constructivism (often combined with interpretivism) is typically aligned with qualitative research.  The constructivist paradigm proposes that *“individuals see understanding of the world in which they live and work”* (Creswell, 2014, p.8). Central to this worldview is the belief that reality and knowledge is subjective, socially constructed and therefore multiple simultaneous realities and meanings exist (Denzin and Lincoln, 2011; Bowling, 2014).  Furthermore, constructivists propose that meanings are individually and collectively constructed from personal histories and the social interactions between individuals, the social environment and the researcher (Creswell and Plano Clark, 2011; Punch, 2014). Rather than seeking to disprove a hypothesis, constructivism aims to understand this complex social phenomena and interpret human experience (Punch, 2009, 2014), in order to inductively develop theory or patterns of meaning (Creswell, 2014).

4.3.1.3 Transformative

Interchangeably referred to as the ‘participatory worldview’, the transformative paradigm proposes that constructivism whilst exploring human meaning and experience, doesn’t go far enough in advocating political and social change for marginalised groups (Creswell and Plano Clark, 2011). Influenced by political concerns, the transformative worldview, which is more often than not associated with qualitative research approaches, focuses on the need to address issues such as marginalisation, inequality, power, social justice, discrimination and oppression (Creswell, 2014).  In the transformative paradigm, these issues form the focal point of research along with the lives, experiences and needs of diverse groups who are deemed to have been underrepresented, i.e. based on gender, race, ethnicity, disability, sexual orientation and socioeconomic class (Mertens, 2010). The concept of participatory and collaborative research is central in this worldview, where participants are given a voice and may assist in the process of designing research methods and collection and analysing data (Creswell, 2014).

4.3.1.4 Pragmatism

The final worldview presented is that of pragmatism, which is commonly linked to mixed methods research approaches (Howe, 1988) and previously referred to as mixed methods *“philosophical partner”* (Johnson and Onwuegbuzie, 2004, p.16).  In the literature, an existence of ‘paradigms wars’ is evidenced, where philosophical worldviews and their ontological and epistemological assumptions are presented as opposing and dichotomous (Howe and Eisenhart, 1990; Johnson and Onwuegbuzie, 2004).  This has contributed to an entrenched polarisation of quantitative and qualitative research approaches, and the accentuated perception regarding the inappropriateness of mixing them, i.e. the incompatibility thesis (Sale et al., 2002; Maxwell and Delaney, 2004; Teddlie and Tashakkori, 2009).

Addressing this perceived incompatibility, pragmatism as a philosophical worldview has been argued as the most appropriate paradigm for mitigating the use of mixed-methods research (Howe and Eisenhart, 1990; A Tashakkori and Teddlie, 2003; Teddlie and Tashakkori, 2009). Pragmatism is argued to arise out of *“actions, situations, and consequences”* (Creswell, 2014, p.10) where *“instead of methods being important, the problem is most important, and researchers use all approaches to understand the problem”* (Tashakkori and Teddlie, 2003, p.10). Referred to the *“philosophy of free choice”*, pragmatism consequently allows for freedom and flexibility in order to adopt multiple methods, different worldviews and varying procedures for collecting and analysing research data (Tashakkori and Teddlie, 2003, p.21).

By not subscribing to the traditionally enforced dichotomy between philosophical postulations, pragmatists believe that drawing from both qualitative and quantitative ontological, epistemological and methodological assumptions and mixing methods is both necessary and acceptable to solve practical problems in the real world (Creswell, 2009a; Feilzer, 2010).  Therefore, in relation to ontology, pragmatists argue that *“even though there is a reality that exists apart from human experience, it can only be encountered through human experience”* and with regards to epistemology *“all knowledge of the world is based on experience”* (Morgan, 2014, p.39). In terms of methodology, instead of focusing on the nature of methods, pragmatism focuses on asking questions about why a researcher would conduct research a particular way compared to another.

By emphasising the process of abductive reasoning, intersubjectivity, i.e. both objective and subjective realities and transferability (Morgan, 2007), what works best is championed by pragmatism and the best possible approach to answering a specific research question is chosen (Johnson and Onwuegbuzie, 2004; Niglas, 2009).

*Chosen philosophical worldview - Pragmatism*

Without nominating a paradigm as the first step, there is no basis for subsequent choices regarding methodology, methods, literature or research design (Mackenzie and Knipe, 2006). Therefore, having extensively reflected upon the worldviews discussed, pragmatism was viewed as most appropriate philosophical worldview to underpin the chosen mixed methods research approach.

This decision was based on three reasons:

1. The researcher prescribed to the belief that the adoption of a philosophical stance is less crucial than the suitability of the approach, i.e. the ability to best answer a research question is more important than concerns over ontology and epistemology
2. Given the view that the proposed research question would truly benefit from mixing methods, pragmatism provided the researcher with the freedom to employ both qualitative and quantitative research methodologies
3. The researcher’s professional background meant that pragmatism was a practical choice, which would allow the researcher to address a real life problem and aim for the research to inform future practice and action

4.3.2 Research designs

The second component of a research approach is that of the research design. Creswell (2014), defines research designs as *“types of inquiry within qualitative, quantitative, and mixed methods approaches that provide specific direction for procedures in a research design”* (p.12).  For mixed methods research designs, a fundamental and defining characteristic is the presence of integration between the qualitative and quantitative findings during the research process, whether at the point of data collection, analysis or interpretation (Teddlie and Tashakkori, 2009).

A variety of motivations exist for integrating qualitative and quantitative findings, although a consistent challenge exists in respect to how and when researchers could and should undertake integration (Morgan, 2013).  To address this issue and distinguish the various motivations for mixing methods, an array of ‘families’ or ‘typologies’ of mixed methods research designs have been developed (Greene, 1989; Morgan, 1998; A Tashakkori and Teddlie, 2003; Johnson and Onwuegbuzie, 2004; Creswell and Clark, 2007; Teddlie and Tashakkori, 2009b; Creswell and Plano Clark, 2011; Morgan, 2014).  The presentation and discussion of typologies remains prominent within the mixed methods literature and are argued to provide researchers, especially those new to designing mixed methods studies, with a guiding framework for choosing the most appropriate research design.

Whilst not exhaustive in capturing the full diversity of mixed methods designs available (Maxwell and Loomis, 2003), typologies offer researchers a *“variety of paths, or ideal design types”* and a *“common language”* for use in the field (Teddlie and Tashakkori, 2009b, p.139). Fundamental to the development of mixed methods typologies, are the presented criteria or choices researchers are required to reflect upon in order to identify and choose the most appropriate mixed methods design for their study.  These criteria or choices are most commonly centred on the timing, weighting and connection of quantitative and qualitative strands or phases (Creswell and Clark, 2007; Teddlie and Tashakkori, 2010; Tashakkori and Teddlie, 2010). Therefore, depending on the research purpose and questions and the researcher’s beliefs and values, the motivation for making particular choices related to mixed-methods designs will differ (Greene, 1989).

Resulting from attendance at a mixed methods research group workshop with leading mixed methods academic Professor Alicia O’Cathain, the decision was made to adopt Creswell and Plano Clark’s (2011) mixed methods typology in order to inform the choice of research design.  For someone new to the field of mixed methods research, it was deemed appropriate to adopt a typology that is both highly prominent and influential in the published literature and *“probably the most commonly employed”* (Bryman, 2016, p.638). Furthermore, this typology was argued to be both accessible and comprehensive for a novice mixed methods researcher (Personal communication, O’Cathain, 2015).

Within their typology, Creswell and Plano Clark (2011), developed six major mixed methods research designs, namely - convergent parallel, explanatory sequential, exploratory sequential, embedded, transformative and multiphase.  The six research designs are proposed as being employed for different research purposes, with each offering distinct characteristics regarding how the quantitative and qualitative strands (or phases) of a mixed methods study relate to each other (Creswell, 2014).  To support researchers to identify an appropriate design from their developed typology, (Creswell and Plano Clark, 2011) posed four decisions points that need to be considered in relation to the interaction, priority, timing and mixing of a study’s quantitative and qualitative strands:

1. What is the level of *interaction* between the quantitative and qualitative strands in the study?
2. What is the relative importance or *priority* weighting of each of the quantitative and qualitative strands?
3. What is the *timing* and order of the strands, i.e. the temporal relationship between the quantitative and qualitative strands?
4. What is the approach and procedures for *mixing* the quantitative and qualitative strands, i.e. the point of interface where integration occurs?

In conjunction with academic supervision, the researcher systematically discussed each of the four decisions points and six research designs, whilst reflecting on the proposed research question, aims and objectives.  Central to these discussions was the issue that a lack of a suitable quantitative instrument (i.e. a survey) or indeed literature relevant to the proposed research question existed.  Therefore the core and overarching priority for this mixed methods study was to undertake a qualitative exploration, with the quantitative element performing a supplementary or follow-up function.  It was proposed that by undertaking the qualitative phase first, the resultant findings could then be utilised to inform the development of an appropriate instrument for use in the quantitative phase.  Furthermore, it was envisaged that by employing this quantitative instrument within a supplementary phase, it would support the ability to demonstrate whether the obtained qualitative findings have relevance beyond the original qualitative sample, i.e. provide additional evidence to support qualitative findings.

Given these specific requirements, upon reviewing Creswell and Plano Clark (2011) typology, the most appropriate mixed methods research design for this doctoral study was identified as the exploratory sequential design.  This design, and a primary motivation for its existence, i.e. developing a survey, is comparable to other mixed methods designs within alternative typologies (Greene, 1989; Teddlie and Tashakkori, 2009; Morgan, 2013). For example, in Morgan's (2014) ‘Sequential Priorities Model’, the ‘Follow-up Quantitative Extension’ design, similar to the exploratory sequential design, prioritises a core qualitative phase with the quantitative method performing a supplementary function having been typically developed from the qualitative findings.

Within Creswell and Clark's (2011) typology, the exploratory sequential design was the only research design that enabled a qualitative methodological focus to be prioritised, each phase to be undertaken sequentially, and crucially for this study facilitated the developed of an instrument between phases.  In addition, having distinct and sequentially performed phases meant the exploratory sequential design was a straightforward choice for a novice-mixed methods researcher, in comparison to implementing more complex mixed-methods designs (Creswell, 2013).

In respect to the remaining five research designs within the chosen typology, three were discounted due to either placing equal emphasis on the qualitative and quantitative strands (i.e. convergent parallel and multiphase) or greater priority on the quantitative element (explanatory sequential).  Two of the same discounted designs were further confirmed as inappropriate for this study given that they either adopted concurrent timing (convergent parallel) or were undertaken sequentially, but led with a quantitative instead of qualitative phase (explanatory sequential).

Finally, recognition of the researchers novice status in relation to employing mixed methods, meant that a previously disregarded design (multiphase), and the two remaining designs were discounted (transformative and embedded).  Argued to be advanced strategies for mixed methods researchers (Creswell, 2014), these designs require additional and complex elements into their overall study procedures, i.e. the use of a theoretical-based framework (transformative) or the administering of several mixed methods projects (multiphase).

The necessity and appropriateness of the researchers design choice (i.e. exploratory sequential) and the discounting of the remaining five designs was confirmed during a ‘one-to-one expert session’ with the aforementioned Professor Alicia O’Cathain (O’Cathain, Personal communication, 2015).

4.3.2.1 Exploratory sequential research design

An exploratory sequential design, often referred to as an instrument development design (Morgan, 1998; Creswell, 2004), is a two-phase design, which starts with a core qualitative phase and leads onto a second supplementary quantitative phase (Creswell and Clark, 2007).  The primary focus of this model is to explore a phenomenon, rather than explaining and interpreting relationships.  Mixed methods researchers have previously demonstrated the use of the sequential exploratory design across a variety of academic fields with all deploying varying qualitative and quantitative research methods (Smith et al., 1995; Tashiro, 2002; Arnold and Reynolds, 2003; Myers and Oetzel, 2003; Mak and Marshall, 2004; Durham et al., 2011).

In addition to providing additional evidence to support the findings from the qualitative phase, the exploratory sequential design is often used to generalize qualitative findings based on a few individuals from the first phase to a larger sample gather during the second phase (Creswell and Plano Clark, 2011).  Whilst the aim may not be to formally achieve statistical generalizability, similarly to Morgan’s (2014) ‘Follow-up Quantitative Extensions’ design, the exploratory sequential design allows evidence to be pursued that indicates whether core qualitative findings were merely context specific or do indeed apply more broadly to the wider population (Morgan, 1998).

Employing this design therefore supports the ability to determine the distribution of a phenomenon within a population, and examine the similarity or differences in perspectives across two different samples (i.e. in each of the qualitative and quantitative phases).

In addition to the purpose of demonstrating generality, this design is argued to be extremely valuable when there is a lack of a relevant and adequate quantitative instrument, i.e. survey available for use in a quantitative phase (Creswell, 2014).  By utilising findings from the qualitative phase, a researcher is therefore able to better inform the development of an appropriate quantitative instrument by enhancing the sensitivity and accuracy of survey questions (Malterud, 2001). This can then be employed with a larger sample in a subsequent quantitative phase.

Table 4.2, describes in greater depth, how the distinct phases of the chosen exploratory sequential design for this study were integrated.  More specifically, responses are provided to the four decision points previously discussed and originally posed by Creswell and Plano Clark (2011), i.e. regarding the interaction, priority, timing and mixing of this study’s qualitative and quantitative stands.

Table 4.2 – Integrating the study’s qualitative and quantitative strands

|  |  |
| --- | --- |
| **Decision point** | **Specific details relevant to the study** |
| What is the level of *interaction* between the quantitative and qualitative strands in the study? | This study adopted a direct level of interaction, where the qualitative and quantitative phases were mixed before the final interpretation of the overall research findings was undertaken, i.e. qualitative first phase findings shaped the design and conduct of the quantitative second phase. |
| What is the relative importance or *priority* weighting of each of the quantitative and qualitative strands? | This study’s priority methodological focus was qualitative.  Greater emphasis was therefore placed on the qualitative exploratory methods.  The quantitative methods performed a supplementary, follow-up role. |
| What is the *timing* and order of the strands, i.e. the temporal relationship between the quantitative and qualitative strands? | This study utilised sequential timing, where the research was conducted in two distinct phases.  The qualitative data collection and analysis was undertaken prior to the commencement of the quantitative phase. |
| What is the approach and procedures for *mixing* the quantitative and qualitative strands, i.e. the point of interface where integration occurs? | This study adopted a mixing strategy where the phases were integrated and connected during data collection, i.e. qualitative findings obtained were utilised to build and inform the development of a data collection instrument for use in the quantitative phase. In addition findings from each phase were further integrated at the point of discussion (see chapter 9). |

A visual representation of this study’s exploratory sequential design and the interaction, priority, timing and mixing of its distinct qualitative and quantitative phases are presented in figure 4.2

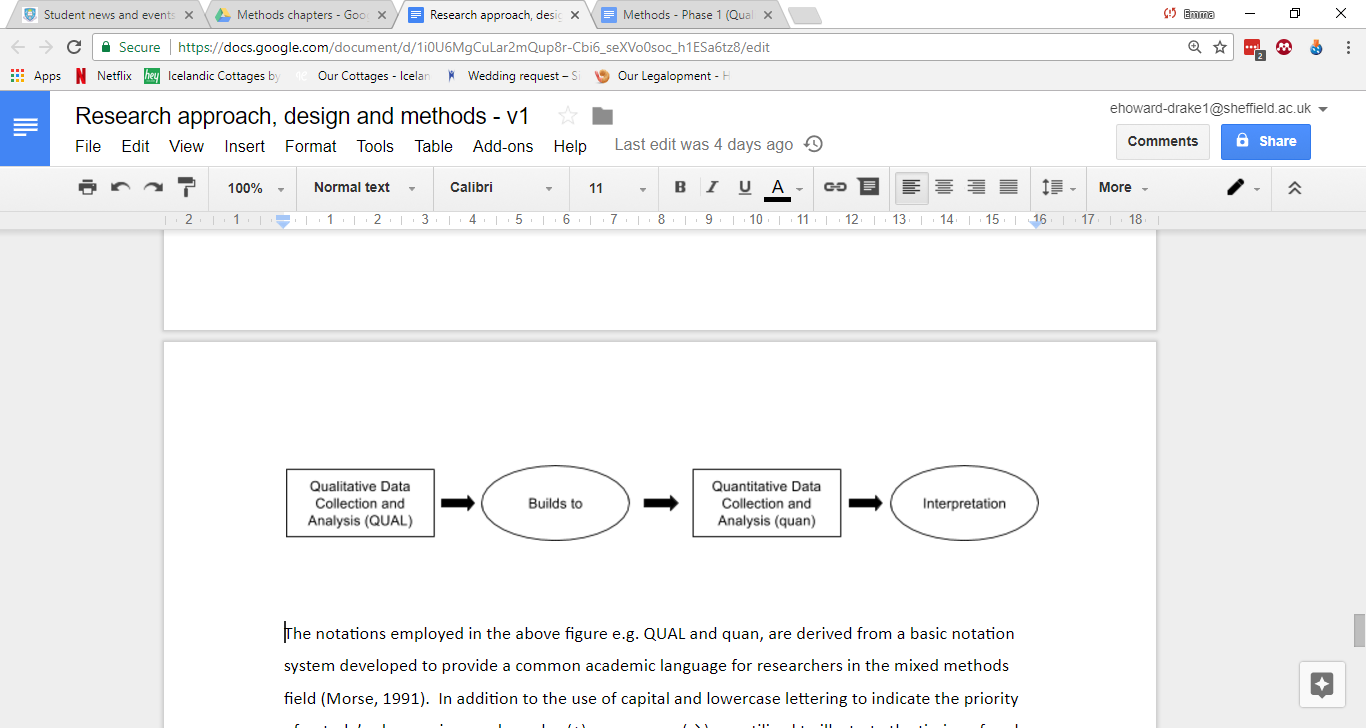


Figure 4.2 – Interaction, priority, timing and mixing of the study phases

The notations employed in the above figure, e.g. QUAL and quan, are derived from a basic notation system developed to provide a common academic language for researchers in the mixed methods field (Morse, 1995). In addition to the use of capital and lowercase lettering to indicate the priority of a study’s phases, signs such as plus (+) or an arrow (→) are utilised to illustrate the timing of each phase (Morgan, 2014).  Therefore in figure 4.2, the use of capital letters for ‘QUAL’ and lowercase for ‘quan’, indicates the qualitative rather than quantitative priority focus, with the arrow illustrating the adoption of sequential as opposed to simultaneous or concurrent timing (Teddlie and Tashakkori, 2009).

As displayed within figure 4.2 the exploratory sequential design process commenced with qualitative data collection and analysis, with ‘builds to’, depicting the point of integration between the two distinct phases (i.e. qualitative findings utilised to develop the quantitative instrument).  The final word ‘interpretation’ reveals the completion of the design process where after quantitative data collection and analysis an overarching interpretation of findings from both phases was undertaken (chapter 9).  This collective interpretation of the qualitative and quantitative findings enables inferences, meta-inferences to be drawn and ‘a negotiated account’ of what they meant together achieved (Bryman, 2007; Teddlie and Tashakkori, 2009).

Whilst it was perceived to be both necessary and appropriate to utilised the exploratory sequential design for this mixed methods study, it was done so in the knowledge of the limitations and challenges associated with its use.  A fundamental issue for this design is the significant time and resources required to implement two separate phases and rigorously develop an adequate and relevant quantitative instrument from the qualitative findings (Creswell and Plano Clark, 2011).  Furthermore, there remains a lack of methodological guidance regarding the practical steps required to conduct mixed methods research, especially in relation to developing robust quantitative instruments from qualitative findings (Bryman, 2006; Onwuegbuzie et al., 2010).Despite these challenges, the selection of the exploratory sequential design was viewed as a straightforward, practical and intuitive choice (Creswell, 2013), which would best support the researcher’s ability to answer the proposed research question.

As discussed previously, the third component of a research approach – a study’s research methods –

are presented separately to this chapter.  A comprehensive overview and justification of the data collection and analysis methods employed for the qualitative and quantitative phases are presented in chapters five (qualitative methods) and seven (quantitative methods).  Additionally and crucial to this chosen design, is the in-depth description provided at the start of chapter seven of the survey development process, i.e. the point of integration.

**4.4 Quality in mixed methods studies**

Whilst quality issues pertinent to each distinctive phase of the research design will be dealt with in their respective methodology chapters (chapter five and chapter seven), it is important to consider quality as overarching concept for this mixed methods doctoral study (O’Cathain et al., 2008; Östlund et al., 2011).  The final section of this chapter therefore proposes how the researcher committed to an appraisal approach, which aims to assess the quality of this mixed methods research project as a whole.

Appraising and achieving quality in mixed-methods research poses unique methodological challenges (Wisdom, 2012).  Furthermore, a lack of consensus exists related to what approach or criteria should be used for appraising or evaluating the quality of mixed methods research (O’Cathain et al., 2008; Heyvaert and Hannes, 2013). It is widely advocated that sufficiently rigorous mixed-methods studies require both the quantitative and qualitative components to adhere to recognised standards in their respective fields (Curry et al., 2009; Tashakkori and Teddlie, 2010; Creswell and Plano Clark, 2011). However researchers should also demonstrate explicit justification and transparency for choosing their overarching research approach and design (Clark et al., 2008; O’Cathain et al., 2008; Leech and Onwuegbuzie, 2009).  In addition and particular to appraising mixed methods research, is the need to assess how qualitative and quantitative strands are *“integrated and how consistency and discrepancy between findings from each methods are managed”* (Wisdom, 2012, p.725).

Despite the lack of an accepted criteria for appraising or evaluating mixed methods research, Creswell and Plano Clark (2007), describe a rigorous mixed method study as one with *“detailed procedures for data collection and analysis, visual analysis of the procedures, and a strong justification of the use of mixed methods”* (p.176).  Criteria presented within this description resonates with the guidance for ‘Good Reporting of A Mixed Methods Study’ (GRAMMS) developed by O’Cathain et al (2008), and chosen to guide the quality appraisal of this mixed methods study.  The researcher committed to adopting the GRAMMS guidelines and set of criteria contained (figure 4.3) in order to maximise the transparency of decisions undertaken and procedures adopted.  GRAMMS guidance was selected over other quality appraisal tools, because the researcher perceived it to provide an overarching, accessible and practical approach to appraising quality of the whole mixed methods study.

*‘Good Reporting of A Mixed Methods Study’ (GRAMMS)*

1. Describe the justification for using a mixed methods approach to the research question
2. Describe the design in terms of the purpose, priority and sequence of methods
3. Describe each method in terms of sampling, data collection and analysis
4. Describe where integration has occurred, how it has occurred and who has participated in it
5. Describe any limitation of one method associated with the presence of the other method
6. Describe any insights gained from mixing or integrating methods

Figure 4.3 – GRAMMS, taken from O’Cathain et al (2008)

In its entirety the complete thesis aims to address all criteria points presented in figure 4.3.  Within this chapter, section 4.2 aims to describe the justification of the chosen research approach, and section 4.2.2 provides an in-depth description of the research design.  Criteria points three and four can be assessed by the content within chapters five and seven, where both the qualitative and quantitative methodologies are provided, including descriptions about integration. Finally criteria points five and six will be addressed within the discussion and conclusion chapter (see chapters nine and ten).

**4.5 Summary**

This chapter has provided a comprehensive overview of research approaches, including philosophical worldviews and research designs specific to mixed methods.  The reasoning to adopt a mixed methods approach and ground the study in the pragmatic paradigm has been articulated and an in-depth description of the specific mixed methods design has been presented, i.e. exploratory sequential.  This study is more than its component parts and so this chapter has addressed the issue of quality as a concept for the mixed methods research as a whole.

**Chapter 5**

**Phase 1 qualitative research methods**

**5.1 Introduction**

As presented in chapter four, it was justified that selecting a mixed methods approach and utilising an exploratory sequential design, would be the most appropriate for answering the proposed research question and addressing the research aims and objectives.  This chapter presents a comprehensive description of the methodology employed during the initial qualitative phase of the chosen research design.  After initially defining the study population, the chapter moves on to provide a thorough explanation of the sampling and recruitment of participants, and methods utilised to collect and analyse the data.  In addition, the chapter includes an overview of the quality considerations and finally the specific ethical procedures, which underpinned the researcher’s approach and conduct during the initial qualitative phase of the research.

Prior to the description of the methods, it is important to re-state the research aims and objectives of the qualitative phase.

Aim 1

Within the initial and core qualitative phase of the research, explore and understand in-depth headteachers’ and chairs of governors’ views and experiences of adolescent obesity and its prevention in English secondary school settings

*Aim 1 Objectives*

* Conduct a systematic review and qualitative synthesis in order to position the research question within existing literature and inform the approach to qualitative data collection
* Undertake semi-structured face to face interviews with headteachers and chairs of governors in England
* Develop and utilise an interview schedule that will enable an in-depth exploration and discussion with interview participants on the following topics -
* Childhood and adolescent obesity causation and consequences
* Types of activity or action undertaken in secondary school settings that contributes to preventing childhood obesity
* Roles of schools, headteachers and chairs of governors in preventing childhood obesity in secondary schools
* The barriers and facilitators of preventing childhood obesity in secondary schools
* Conduct a thematic analysis of the collected interview data, in order to generate a cohesive narrative of the qualitative findings

**5.2 Study Population - Inclusion and Exclusion criteria**

Across both phases of the research, the target study population were headteachers and chairs of governors, who were employed or in the case of the latter elected, within secondary schools in England.  This was because their perspectives formed the focus of the research question, in relation to adolescent obesity and its prevention within secondary school settings.  An inclusion and exclusion criteria was applied so that the target study population could be clearly defined and the eligibility of the participants could be ensured.  
  
*Inclusion criteria*  
  
- Secondary school headteachers\* (or acting headteachers) actively employed during the data collection period at a secondary school\*\* in England  
- Chairs of governors elected and serving during the data collection period at a secondary school in England  
  
*Exclusion criteria*  
  
- Secondary school headteachers (or acting headteachers) and chairs of governors not actively employed or serving during the data collection period at a secondary school and/or not based in the geographic location of England  
  
\*For the purpose of the study ‘headteacher’ was used as the collective term when referring to a person who is the overarching lead within a school.  In some schools alternative titles are used to depict this position, i.e. Principal, Executive head. Inclusion was therefore based on their position as being in charge of a school, regardless of their title.   
\*\* For the purpose of the study the term ‘secondary school’ was used to denote any school in England providing secondary level education to children and young people aged between 11 to 16yrs.

**5.3 Sampling**

5.3.1 Sampling strategy  
  
A selection process was utilised to determine whose perspectives would be included across both phases of the research, thereby sampling deliberately with a specific purpose (Punch, 2009; 2013).  There are multiple techniques for sampling a study population (Creswell, 2014).  Given the mixed methods research design and different research aims and objectives for each phase of the research, an appropriate sampling strategy relevant to each of the qualitative and quantitative phases was employed.

For qualitative research, it is not appropriate, realistic or often desirable to include all potential participants from a target study population (Bryman, 2012), and therefore the relevant findings obtained within this study could never claim to represent all individual views.  However, this doesn’t negate the fact that a robust sampling strategy was still required, in order to maximise the quality and range of responses and obtain a rich and deep understanding (Ritchie et al., 2003; Creswell and Plano Clark, 2011).   
   
The initial qualitative phase employed the non-probability sampling technique of stratified purposive sampling (Marshall, 1996; Collins, 2007; Palinkas et al., 2013). Stratified purposive sampling aims to *“capture major variations”* (Patton, 1990, p.175) in the population under study, and requires selected cases to be divided into stratas, based on specific characteristics of interest (Teddlie and Yu, 2007).  By effectively creating samples within samples (Patton, 2002a), features that are similar or different across the stratas can be assessed and compared across the stratified groups (A Tashakkori and Teddlie, 2003).  Ritchie and colleagues (Ritchie, et al., 2003), argues that this process *“enables a detailed exploration and understanding of the central themes and puzzles”* (p.78).

5.3.2 Purposive Sample – Stratification  
  
Two regions of England, Yorkshire and the Humber and the West Midlands were chosen as the geographical focus in order to ensure the qualitative sample phase was drawn from a large diverse pool of secondary schools.  This was also a practical decision, given the researcher’s location, knowledge of each particular geographical area and the limited time and resources available for conducting face to face interviews.  
  
Stratification of the purposive sample were based on four stratas, i.e. school characteristics of interest:  
  
- School type (i.e. community, academy, independent)  
- Pupil population  
- Free school meal percentage - used as a proxy for pupil disadvantage (Department for Education, 2017)   
- Ofsted inspection rating (Ofsted, 2016)

The selection of stratas was derived both from the literature review (i.e. evidenced link between adolescent obesity and deprivation) and primarily from what wasn’t known in the extant literature, but was of interest to the researcher (i.e. adolescent obesity and school type).  In addition, a lack of publically accessible information regarding headteachers’ and chairs of governors’ demographics, meant stratification based on school characteristics instead of participant demographics was necessary.

5.3.3 Approach, recruitment and engagement of the sample  
  
It was envisaged that recruiting participants to the study would be a challenge.  This view was based on the researcher’s previous experience of completing a MPH dissertation project with primary school headteachers.  In that project a significant number of potential participants were invited, but either didn’t respond or declined the invitation, with the latter due to headteachers primarily reporting busy complex schedules and a lack of time.  Consequently it was expected that a significant number of secondary schools would need to be approached across both regions, in order to achieve an appropriate/suitable sample size.  
  
The process of identifying the sampling frame of potential schools, started with obtaining a comprehensive list of all schools in each local authority within the two regions of Yorkshire and the Humber and the West Midlands.  The Edubase2 register (Department for Education, 2015a) was utilised to access this information and ensure the resultant list was accurate.  Edubase2 is an online register, which authoritatively lists all education establishments in England and Wales and is maintained by the Department for Education.  In addition to assisting in the formation of a school list for each region, the Edubase2 register also provided the researcher with school contact particulars including a link to each school website.

A simple spreadsheet database was used by the researcher to record the details of schools approached, including the local authority and region they were situated in and school specific information regarding the categories for stratification sampling (stratas) i.e. school type, pupil population, free school meal percentage and Ofsted rating.  The Secondary School Performance Tables (Department for Education, 2015c), were used to access publicly available information about the stratas of interest.

Once the final sampling frame had been established, schools in local authorities most conveniently located to the researcher’s location were contacted first.  Depending on whether a response was received and if so whether there was an agreement to take part, schools at greater geographical distance from the researcher were then approached.  Throughout this process, once a headteacher or chair of governor agreed to participate, the researcher reflected on the stratas of interest each willing participant represented in order to guide and target future recruitment.  This was done to assist in ensuring that the final sample would reflect the variations that exist across each strata, i.e. different school types and differences in pupil populations, free school meal percentages and Ofsted ratings.

Approach for the purpose of recruiting headteachers and chairs of governors to become research participants was all done via email.  Schools were individually emailed, primarily through a generic administration email address listed on their school website.  Each individual email included a summary of the intended research, a participant information sheet and a consent form.  In addition, the researcher asked for the email to be forwarded to the school’s corresponding headteacher and/or chair of governors.

Where publically available, headteachers’ or chairs of governors’ direct email addresses were used, which assisted in making the email invitation to participate personalised.  If no response either agreeing or declining to participate was received, no further contact was made to the school again.  Based on previous experience a follow up approach did not aid in increasing the likelihood of recruitment.

It was decided that approaching local governor associations to ask for assistance in distributing the study recruitment information could be of use.  Consequently, the chairs of local governors associations situated across the two regions were contacted.  Each chair was emailed and asked to distribute the summary of the intended research, participant information sheet and consent form to their respective chair of governors members.

Between the months of January and May 2016, a total of 153 emails were sent to secondary schools and six local governors associations were contacted.  The additional sampling method of snowball sampling was employed during the data collection process.  Argued to be the most widely utilised sampling technique within qualitative research across social sciences (Noy, 2008), snowball sampling occurs when a researcher identifies participants through contact information or a direct referral provided by an existing participant (Atkinson and Flint, 2001). Three headteachers who were confirmed as participants directly referred the researcher to their school’s respective chair of governors. A fourth headteacher gave contact information for a headteacher colleague who was employed within their school’s academy network. This method was effective in recruiting four participants to the qualitative phase.

The combined sampling, approach and recruitment process resulted in 24 agreeing to participate (14 headteachers and 10 chairs of governors).  Confirmation of willingness to participate resulted in email communication forming the basis of arranging face to face, semi-structured interviews.  After initially agreeing, two participants went on to decline after reporting time commitments.  This resulted in a final sample of 22 participants (13 headteachers and 9 chairs of governors).   Data saturation (Guest et al., 2006) was deemed to have been achieved from conducting 22 interviews, and consequently no further recruitment or qualitative data collection was undertaken (see section 5.3.4).  The concept of data saturation and its application in relation to the data collected were extensively discussed with the academic supervisors in addition to reviewing the relevant literature (Guest et al., 2006; Bowen, 2008)

A total of 23 people responded to the email invitation by indicating they or their respective headteacher or chair of governors were unable or unwilling to participate in the research.  The primary reasons for declining to take part included:

* Time pressures related to their role
* Number and frequency of requests to participate in research projects
* Research topic not perceived to be of relevance to the school

5.3.4 Sample Size and Data saturation  
  
Purposive samples as utilised in the first phase of this research, are the most common type of non-probabilistic sampling (Guest et al, 2006).  Identifying the correct purposive sample size required to answer a proposed research question either prior to or during the research process is extremely challenging (Baker and Edwards, 2012). Sample sizes within qualitative research are broadly speaking smaller than that utilised within quantitative research (Ritchie et al., 2003).  Whereas quantitative research is typically focused on frequency of occurrences in order to make and test generalised hypotheses, qualitative research is concerned with exploring and understanding meaning (Creswell, 2013).  Consequently, one occurrence is as potentially important as multiple occurrences when undertaking a qualitative inquiry of a topic area (Mason, 2010).

Despite this, it remains crucial for qualitative researchers to establish and ensure their data set is both comprehensive and complete in order to enhance the validity and reliability of the research (Morse et al., 2002).  The concept of data saturation is proposed as the stage of collection in which completeness occurs (Guest et al., 2006), where a researcher is gathering data to the *“point of diminishing returns”* (Bowen, 2008, p.140) and nothing new is being added (Huberman and Miles, 1994; Corbin and Strauss, 2015).  Despite the fact that saturation has *“become the gold standard by which purposive sample sizes are determined in health science research”* (Guest et al, 2006, p.60), it remains a debated and contested concept in qualitative research.  This is highlighted by the lack of *“published guidelines or tests of adequacy for estimating the sample size required to reach saturation”* (Morse, 1995, p.147).

Academics have argued that an extensive range of factors determine data saturation (Mason, 2010; Baker and Edwards, 2012), including the type of data collection methods, the heterogeneity of the study population and the breadth and scope of the research question (Morse, 2000; Mason, 2010). The substantial variation in how and when data saturation is arrived at, has led to academics claiming an inability to firmly answer a question frequently posed by less experienced researchers, i.e. ‘how many interviews is enough?’ (Baker and Edwards, 2012).  A standard figure doesn’t exist to address this question, despite multiple researchers attempting to quantify an answer or at least provide overarching guidance (Mason, 2010, Baker and Edwards, 2012).  Therefore whilst data saturation can be of use at a conceptual level, its illusive nature and the lack of associated practical guidelines can pose a frustrating challenge, especially for novice researchers who are attempting to conduct quality research.

In relation to this study, the familiar questions often asked by early-career researchers of ‘how many interviews should I do?’, ‘how will I know when I have done enough?’, ‘when do I stop?’ (Baker and Edwards, 2012) were posed at the point of developing the research proposal.  To support the process of answering these questions within this phase of the research, three approaches were undertaken.  Firstly a theoretical understanding of data saturation was obtained from reviewing relevant research literature.  Secondly, the researcher committed to concurrently collecting and analysing the data in order to support the easier and earlier recognition of saturation (Sandelowski, 1995, 2001; Guthrie et al., 2004).  This involved undertaking preliminary analysis by transcribing interviews within a week of each interview taking place and reading and re-reading the data obtained.  This approach, enabled an exploration of what was starting to be known in the data, but also what the researcher felt needed to be known going forward. Morse and colleagues (Morse et al., 2002) refers to this as an iterative interaction between data and analysis.  Thirdly, throughout the data collection and early analysis stages, a reflective process was undertaken in conjunction with academic supervision.  This enabled the researcher to discuss the data in greater depth and generate initial mind-maps through the identification of emerging themes.

The combination of the three approaches, led the researcher to assess under academic supervision that conducting further interviews after the 22nd, would hold minimal value and that nothing new would be learned that would contribute to answering the research question.

**5.4 Data collection**

Selecting an appropriate method to collect data is a crucial decision, one which is based not only on the research question, aims and objectives, but also the practicalities, capacity and resources of the researcher (Bryman, 2016).  Within the three overarching categories of qualitative data collection, namely interviews, observations and document reviews, a variety of methods exist (Creswell, 2014).  To support the exploratory nature of the first phase of the mixed methods study design, semi-structured face to face interviews were used to collect study data.

5.4.1 Interviews

Interviews are considered to be the gold standard of qualitative research (Silverman, 2013), and are argued to be the most commonly used method to generate qualitative research data (Nunkoosing, 2005).  Interviews aim to capture in-depth information about participant’s perspectives, meanings and experiences for interpretation and analysis by the interviewer (Warren and Karner, 2005; Bowling, 2014).  The choice of interview type (structured, semi-structured and unstructured) and interviewing method (individual, group, face to face or telephone) depends upon the nature of the research (Punch, 2013), and can influence the relationship between researcher, participants and the knowledge produced (Pope and Mays, 2006).

In relation to interview type, the number, format and delivery of interview questions determines its classification as either unstructured, semi-structured or structured (Bryman, 2016).  Whilst it is argued that no interview can be completely devoid of structure (DiCicco-Bloom and Crabtree, 2006), unstructured interviews prescribe no or minimal organisation to how or whether questions are posed. They are therefore argued to often resemble a guided conversation (Bryman, 2016).  In comparison, structured interviews apply a pre-determined set of questions, frequently with the inclusion of closed questions and often with a fixed set of answers to choose from (Bryman, 2016).   As a novice researcher, the challenge and concern of retaining a clear focus without a defined structure led to the use of unstructured interviews being discounted.  In addition, and in direct contrast, the highly prescriptive nature of structured interviews in terms of what, how and when interview questions should be asked, felt inappropriate given the necessity to flexibly yet purposely explore participants perspectives.

The remaining interview type, semi-structured interviews, are commonly used by qualitative researchers.  They typically resemble more naturally occurring conversations, whilst allowing some standardisation and comparability through elaboration and elucidation of participant-led dialogue (Warren and Karner, 2005; DiCicco-Bloom and Crabtree, 2006; Punch, 2014). In addition to covering set topics and asking fixed questions, semi-structured interviews allow participants to talk freely and interviewers to dynamically probe around the issues salient to each interview (Polit and Beck, 2013; Ritchie et al., 2013; Bowling, 2014).  Semi-structured interviews were chosen, as having a loose structure supported the exploratory nature of the initial qualitative phase, whilst still ensuring core topics were covered (Polit and Beck, 2012).  Semi-structured interviews are based on a list of questions or defined areas to be explored, usually referred to as an interview guide or schedule (Bryman, 2012, Bowling, 2014). In comparison to structured interviews where questions are asked in an exact order each time, semi-structured interviews allow the researcher the flexibility to determine which order to ask each question dependant on the participants’ responses and answers (Bryman, 2016).

In respect to interviewing method, i.e. telephone, group, face to face, the advantages and disadvantages of each were reflected upon when designing the data collection methodology.  Group interviews also known as focus groups (Morgan, 1997) were initially considered as a potential option for data collection during phase one.  This was due to the perceived advantages that interaction between participants during focus groups could yield, in relation to understanding the extent to which consensus or diversity exists across the study population (Morgan and Krueger, 1993). However, based on the researcher’s experience of engaging with the study population both professionally and in an academic capacity, focus groups were deemed impractical to conduct given the time pressures and complex work schedules of school leaders.  Telephone interviews have been advocated for use in qualitative research inquiry (Sturges and Hanrahan, 2004). Their use in this study could have enabled access to a wider geographical pool of participants and significantly reduced both the time and financial resources committed by the researcher (Irvine, 2011).

Despite these advantages, it was deemed that face to face interviews would foster a greater rapport with participants in comparison to telephone interviews, which could potentially assist in achieving a greater *“depth of coverage and depth of detail”* (Irvine, 2011, p. 211). Furthermore, the use of face to face interviews in the initial phase of the study was also chosen to provide the researcher with a useful understanding of each participant's local setting.

5.4.2 Interview schedule  
  
An interview schedule was created (Appendix F), to provide what McCracken (1988, p.37) describes as, a *“travel itinerary with which to negotiate the interview”,* both enhancing the consistency of data collection and ensuring topics are covered systematically (Ritchie et al., 2013).  Based on the researcher's previous experience with a similar school stakeholder group (primary school headteachers), and evidenced good practice (Cohen et al., 2004; Pope and Mays, 2006), the interview schedule comprised of a mixture of closed and open-ended questions.  The first two questions asked factual demographic information, i.e. participant age and length of time within their respective leadership roles, to allow comparisons to be drawn between participant’s responses.  The third question, asked participants to describe an account of their journey to becoming either a headteacher or chair of governors.

Asking participants to share familiar information and personal experiences prior to questions related to the research topic, was done to facilitate participant dialogue, put them at ease and *“rapidly develop a positive relationship”* (DiCicco-Bloom and Crabtree, 2006, p.40).  Furthermore, this question, whilst not about the research topic under study and therefore not formally analysed, enabled the researcher to position and understand participants perspectives within the context of their wider previous personal, professional and social experiences.

The remainder of the interview schedule focused on asking open-ended questions that were directly connected to the research topic.  Two main areas of consideration shaped the development of the questions content.  Firstly, reviewing the relevant literature was essential so that areas of specific interest and relevance identified in the existing evidence base could be explored and uncovered.  Secondly, it was crucial to review the research aims and objectives to ensure that the interview questions posed would address the overall research purpose.

In addition to utilising the interview schedule to guide each interview, the process of concurrently undertaking data collection and preliminary data analysis (see section 5.5), led to additional questions being posed to subsequent participants.  The process of transcribing and reading data from completed interviews whilst still undertaking data collection meant that initial impressions or evolving areas of interest could be explored with new participants.  New questions not on the schedule were often posed, with the aim of identifying confirmation or deviation from any early emerging themes (Mays and Pope, 2000).  A question posed as an example, was ‘some headteachers have reported they believe a link exists between poor eating habits and deprivation, what, if anything is your opinion on this?’

5.4.3 Interview procedure

The data collection period started in January 2016 and continued until May 2016, lasting a period of 14 weeks.  Out of 22 interviews, 18 were conducted within a participant's school setting, predominantly in a headteachers office or a private meeting room.  By request, four participants, all chairs of governors asked to hold the meeting outside of their school.  This was due to convenience given their location or the accessibility of appropriate space at their school.  Three interviews were conducted in a private room in the department of the School of Health and Related Research at The University of Sheffield.  One was undertaken in a quiet area within a gallery cafe in Sheffield city centre (as requested by the participant).  The average length of time was 49 minutes.

At the start of each interview, the researcher thanked the participant for committing their time and provided a brief overview of the research purpose, interview procedure and how their valuable contribution would form part of the overall study.  The participant information sheet (Appendix I) and consent forms (Appendix J) were discussed, ensuring that the participant had a) received and read a copy of each prior to the interview, b) agreed to the interview being recorded and c) signed the written consent form agreeing to be interviewed.  Assurances were given regarding confidentiality and data management procedures and the participant was then given the opportunity to ask any questions.  Once the interview was completed, the researcher again thanked participants for their contribution and assured participants that should any publications arise from the study, they would be emailed a copy for their records.

5.4.4 The interviewer and interviewing skills  
  
An important aspect of qualitative research and interviews, is an interviewer’s ability to facilitate a participant’s willingness to reveal and disclose information (Punch, 2013).  This is achieved through developing a co-equal relationship based on mutual trust, respect and rapport between the researcher and the researched (Pope and Mays, 2006; Punch, 2014).  In order to maximise this process, a number of approaches were used within each interview:

1. In addition to holding interviews at venues convenient to each participant, dates and times of each interview were arranged around participants existing schedule and commitments in order to reduce barriers to engagement.
2. The researcher dressed in smart casual clothes, appropriate to conducting interviews within a school setting or chosen venue and in order to aid in developing a professional yet informal atmosphere.
3. Where relevant and appropriate, the researcher disclosed and shared personal experiences in order that interviewees felt a reciprocal relationship existed with the interviewer (Reinharz and Davidman, 1992).  This was frequently done through informal conversations before each interview, to ‘break the ice’ and were typically not related to the research topic.
4. Appropriate, sensitive and reflective probes or ‘checking questions’ were used to gain a better understanding, remove ambiguity and to show a genuine interest in understanding participants perspectives (Denscombe, 2009, 2014).
5. The researcher consciously adopted a positive and open body language, maintaining frequent eye contact, with the use of confirmatory words or motions to indicate active listening.

5.4.5 Recording of Interviews  
  
With each participant's’ explicit and written permission, each interview was recorded with a digital audio-recorder application on the researchers smart phone. Consent to be recorded and the management of audio files is detailed in section 5.7.  Brief field notes were only taken where absolutely necessary to support the audio recordings, typically summarising the main impressions after the interview was completed.  This approach was employed based on experiences in conducting the pilot interviews.  Where field notes were undertaken, data sources were cross-referenced as a means of enhancing the reliability and validity of the findings obtained (Seale and Silverman, 1997; Easton et al., 2000; Punch, 2014; Bowling, 2014).  
  
5.4.6 Pilot interview  
  
In order to trial the qualitative data collection instrument, the interviewer’s skills and the suitability of the practical arrangements, two pilot interviews were undertaken and transcribed (de Vaus, 2001). In general, it was viewed that the interview schedule and procedures would be both appropriate and effective in meeting the aims and objectives of this phase of the research.  The two pilot interviews indicated that participants understood the questions that were posed.

As a result of undertaking the pilot interviews the following amendments were made to the interview schedule and procedure:

* The phrase ‘childhood obesity’ utilised across the schedule was changed to ‘excess in weight in children’.  It was perceived that the latter phrase better depicted all adolescents that are above a healthy weight, whereas the word ‘obesity’ presented clinical connotations of extreme weight gain.  In reality, participants themselves used a variety of words or phrases interchangeably when referring to school pupils (i.e. adolescents, kids, children, students) or making reference to obesity (i.e. excess weight, unhealthy weight, overweight, fat).
* The volume of the audio recorder application was increased during subsequent interviews, due to background noise within the school affecting the ability to hear the participant at times on the recording.
* The researcher asked her academic supervisors to review the transcripts from the two pilot interviews in order to make an objective assessment on her interviewer skills.  Whilst no major improvements were said to be required, the researcher was identified as having a tendency to ‘fill the gaps’ of any silence.  Therefore the researcher was encouraged in subsequent interviews to allow a longer space for interviewees to reflect on what they had said or allow them to potentially add something further.
* During the pilot interviews, the researcher found that attempting to write full and detailed field notes during the interviews became a distraction for both the interviewer and interviewee. It also posed a challenge in maintaining open and positive language, i.e. eye contact.  Consequently, by relying predominantly on the audio recorder and only making brief field notes occasionally, the researcher was able to actively listen, reflect and focus on areas needing to be explored rather than trying to remember what had been said.  This developed a more conversational and engaging style, which appeared to strengthen the rapport with each interviewee.

Overall, aside from the minor amendments above, there were no significant alterations to the structure and content of the interview guide or the practical arrangements for conducting the interviews.  Based on the perceived quality of the data obtained from the pilot interviews, the two pilot interview transcripts were incorporated into study findings to make maximum use of the research time and data.

**5.5 Data Analysis**

As discussed in chapter three, how data is analysed within mixed methods research depends on the design selected.  The adoption of a mixed methods exploratory sequential design, requires the two distinct qualitative and quantitative phases to be analysed separately and sequentially prior to an overarching interpretation of the connected results can take place (Creswell, 2014).

The growth in application of qualitative research methods over the last two decades, has resulted in an extensive range of analytical methods being developed to analyse qualitative data (Silverman, 2013).  Due to their diversity and complexity (Holloway and Todres, 2003), a large number of research texts have been written to inform and guide the process of qualitative data analysis (Patton, 2002; Silverman, 2013; Creswell, 2013; Miles et al., 2014).

Although evidenced as offering significant insight into social phenomena (Pope and Mays, 2000), the substantial volume of data generated when employing qualitative methods, and the iterative nature of analytical methods can present a complex and time consuming proposition (Bowling, 2002; Holloway and Todres, 2003). An additional challenge lies in the fact that no agreement exists that explicitly states the best method or a *“singularly appropriate”* way for analysing qualitative data (Bradley et al., 2007, p.1760).  In spite of this, the widely held perception is that methods to collect and analyse qualitative data *“are at least in part craft skills, best learned through practical engagement”* and learned experience (Li and Seale, 2007, p.1443).  For a researcher performing the analyst role, learned experience comes from undertaking the fundamental tasks of *“defining, categorizing, theorizing, explaining, exploring and mapping”* (Huberman and Miles, 2002, p.309).

Braun and Clarke (2006) argue that methods of qualitative data analysis can be roughly divided into two categories, the first where analytical methods are driven by or linked to a theoretical or epistemological position, examples of which interpretative phenomenological analysis (Smith and Osborn, 2015), grounded theory (Glaser, 1992) and discourse analysis (Burman and Parker, 1993).  The second category or group, which includes thematic analysis is proposed as independent of both theory and epistemology and can therefore *“be applied across a range of theoretical and epistemological approaches”* (Braun and Clarke, 2006, p.78).  Regardless which method is employed in qualitative data analysis, overarching similarities exist in respect to the broad aims of providing a deep, quality and rich understanding, interpretation and description of social phenomena (Ezzy, 2002; Basit, 2003).

5.5.1 Thematic analysis

In addition to an extensive review of the literature related to qualitative data analysis (Patton, 2002b; Bryman, 2008; Silverman, 2013; Creswell, 2014), the researcher engaged in extended discussions with leading mixed methods academic – Professor Alicia O’Cathain (Personal communication, Alicia O’Cathain, 2015), in order to inform the choice of analytical method.  Three options (grounded theory, narrative analysis, and thematic analysis) were explored and considered in relation to both the phase one aims and objectives, and also the overarching approach, design and methodology of the study.  Whilst, both grounded theory and narrative analysis are useful for exploring topics that have received little research focus, they were discounted for this study given the researchers novice status and the perceived requirement for each to have in-depth theoretical and technical knowledge (Bryman, 2016). Thematic analysis was therefore deemed the most appropriate option for analysing the phase one qualitative data.

Thematic analysis, first described in the 1970s (Merton, 1975), is viewed as a method for analysis as opposed to a methodology (Braun and Clarke, 2006).  Understood to be the foundational approach for analysing qualitative data, thematic analysis aims to search, examine and describe patterns and meanings in rich detail (Clarke and Braun, 2013).  It’s freedom from a specific epistemology or theory enables researchers especially at the beginning of their research career to learn the fundamental generic skills of qualitative analysis (Holloway and Todres, 2003), without requiring in-depth theoretical knowledge.  The main premise of thematic analysis is to identify themes in the data, either inductively or deductively, with themes strongly linked to the data in the former and themes derived from pre-existing concepts and ideas in the latter (Patton, 2002, Silverman, 2013). Braun and Clarke (2012) argue that the reality is thematic analysis is conducted utilising both inductive and deductive approaches.

A number of factors influenced the decision to utilise thematic analysis for analysing the data set obtained from the initial qualitative phase.  Firstly, given the pragmatic stance adopted by the researcher, it was important to employ an analytical method that would ‘work best’ given the chosen research topic, question, design and data collection methods.  The exploratory nature of the first phase, and the necessity to utilise the qualitative findings to develop the survey meant thematic analysis was a pragmatic choice for the instrument development design given its flexibility, versatility and accessibility (Braun and Clarke, 2006).

Secondly, the lack of a pre-existing theoretical framework in which to analyse and interpret the qualitative data was perceived by the researcher to be of benefit.  This was due to the ability to be able to analyse from the ‘bottom up’ (Braun and Clarke, 2006), where the themes were able to be driven and derive from the content of the data (Patton, 1990), as opposed to the researcher’s theoretical interest.  Approaching analysis inductively therefore, was done with the aim of giving voice to participants’ perspectives and experiences.   However, Braun and Clarke (2012), highlight that in reality, it isn’t possible to be completely free from theoretical commitments as *“we always bring something to data when we analyse it”* (p.58).

Finally, criticism has been levied at thematic analysis for lacking the robustness, interpretative depth and sophistication of other analytical methods (Smith and Firth, 2011).  This has led to questions about its suitability for qualitative doctoral research projects (Braun and Clarke, 2014).  These views were disregarded given that thematic analysis was used within one phase of a wider mixed methods research design and that a widely advocated, systematic and intricate step-by-step process was to be followed (Braun and Clarke, 2006).  Furthermore, as a PhD researcher with limited practical experience, it was felt employing thematic analysis under the guidance of experienced academic supervisors would assist the researcher in learning valuable *“core skills that will be useful for conducting many other forms of qualitative analysis”* (Braun and Clarke, 2006, p.78) and therefore be of great use in progressing within an academic career.

5.5.2 Thematic analysis - step by step

The thematic analysis was guided by Braun and Clarke’s (2006) six phase process (See Figure 5.1 below).  Whilst visually displayed as a sequential step by step approach (i.e. short arrows), the non-linear nature of thematic analysis as discussed within the below reflections, required each phase to be visited and revisited frequently (indicated by a single long arrow).

*Phase 1: Data familiarisation*

Familiarisation with the data began from the commencement of data collection.  As discussed previously, and as recommended (Liamputtong, 2009; Bryman, 2016), the data analysis process started concurrently with data collection, with initial interests arising as a result of even the first pilot interview noted and reflected upon.  After completing each interview, the respective audio recording was transcribed usually within two to five days.  Each transcript was meticulously read and compared to the audio recording in order to check for accuracy.  Having undertaken and transcribed all 22 interviews verbatim, the researcher was able to ‘immerse’ herself in the data by gaining familiarity of the *“depth and breadth of the content”* (Braun and Clarke, 2006, p.87).

Whilst time consuming (four to six hours of transcribing per hour of recorded interview), this process along with reading and re-reading each transcript during the continued data collection, proved to be an extremely worthwhile in enabling the researcher to interactively identify early patterns in the data.

**1. Becoming familiar with the data**

Interview transcripts and interviewer notes to be read and re-read multiple times during the process of data collection and at the end

**2. Generating initial codes**

Input interview transcripts into NVIVO 11 (a software programme specifically designed to manage qualitative data)

**3. Searching for themes**

List of codes are sorted and organised into potential themes using a mindmap to provide a visual representation

**4. Reviewing themes**

Potential themes are reviewed, ensuring they have enough data to justify it as a theme and then assessed to ensure they represented the data properly

**5. Defining and naming themes**

A detailed analysis of each theme is undertaken including the identification of any sub-themes

**6. Producing the report**

A detailed and analytical narrative to be presented with supporting extracts embedded from data sources

Figure 5.1 - Six phase process to thematic analysis (Braun and Clarke, 2006)

*Phase 2: Generating initial codes*

Once the researcher felt phase one had been completed thoroughly, an academic supervision meeting assisted in moving forward onto the second phase of generating initial codes.  Codes are said to identify an element of the data that appears interesting to the analyst (Braun and Clarke, 2006) and are typically applied to portions of data, words, phrases, sentences or whole paragraphs (Basit, 2003).

After discussing initial ideas developed from data familiarisation, a sample of extracts from different transcripts were reviewed with academic supervisors in order to practically explore the process of initial coding.  Both academic supervisors and the researcher initially coded the sample of extracts to compare and contrast what interesting elements had arisen.  The decision to undertake this group coding activity was based on the recognition that learning qualitative analytical methods can be enhanced through interaction with a more experienced researchers (Hammersley, 2004).  Despite mutual or group coding, not necessarily leading to more accurate coding (Braun and Clarke, 2006), the exercise was merely undertaken to develop researcher confidence and understanding of the task in hand.

Over 150,000 words of data were generated from conducting the 22 interviews.  Consequently, this was a substantial amount of data to manage and code.  To obtain a physical and visual sense of the data, the first five transcripts were coded initially by hand on paper, using highlighters, pens and post-it notes (Appendix G).  These five transcripts and all remaining transcripts were then uploaded to the qualitative data analysis software - QSR International NVivo 11 (QSR International, 2015) and coded.  Whilst not performing an analytical role, the use of NVivo aided in collecting and organising the anonymised transcriptions, managing the generated codes and collating relevant data extracts (Silver and Lewins, 2014).

The broad, open and exploratory nature of the interview questions posted, coupled with the researchers limited experience in undertaking qualitative data analysis, resulted in a high number of initial codes being generated, 396 in total. Common with PhD researchers who perceive they lack the skills, confidence or practice experience in knowing what, when and how to code (Li and Seale, 2007; Liamputtong, 2009), the researcher potentially over coded for fear of missing something of importance or interest in the data set.

Once the entire code list was generated, academic supervision assisted in understanding that this experience was part of the learning process and at the very least demonstrated a thorough and comprehensive approach.

*Phase 3: Searching for themes*

Once the list of initial codes had been generated, the process of sorting and organising them into broader themes began.  Again the use of NVivo aided in collating and organising the coded data extracts.  The researcher created a series of mind maps on paper, in order to visually understand the relationship between codes and how codes could be combined to form potential themes. At this point, some of the codes were combined or merged, or disregarded entirely based on their perceived irrelevance.   A group of codes were temporarily categorised as miscellaneous as they didn’t seem to ‘fit’ one or more of the emerging main themes.  The end of this phase resulted in a draft structure of three themes. It was at this stage that interpretative analysis of the data occurs and arguments about the shape and meaning of the phenomenon under study are made (Boyatzis, 1998; Braun and Clarke, 2006).

*Phase 4: Reviewing themes*

Once the draft or newly proposed themes were developed, a refinement process began.  Coded data extracts were once again reviewed, although this time under each draft theme heading. This phase focused on ascertaining whether the identified potential themes could be supported by the data, were coherent in terms of the patterns form and distinct from one another.  This process confirmed the appropriateness of the three draft themes, however it also resulted in the development of a new theme due to specific data extracts not fitting in the draft structure.  The second part of this phase, required the researcher to re-read all transcripts and coded data extracts in order to consider the validity of individual themes in relation to the data set.  This also provided the advantage of identifying data, which had previously been missed from earlier stages of coding.

*Phase 5: Defining and naming themes*

Once the thematic map had been finalised (Figure 6.1) and the themes had been refined, it was important to define exactly what each theme captured in terms of meaning in the data and why this was of interest.  Braun and Clarke (2006), suggest within this phase the researcher is then aiming to go *“back to collated data extracts for each theme, and organizing them into a coherent and internally consistent account, with accompanying narrative”* (p22). In addition to defining individual themes, carefully considered how each would contribute to and form an overall account of the findings obtained.  In order to provide additional structure to the themes both individually and as a collective, sub-themes were identified and defined (fourteen in total).  Once the researcher established the definitions of each theme and sub-theme, names or more precisely working titles were drafted to succinctly portray the included scope and content.  This process took a considerable time as constant refinement was required until the researcher felt confident that the name given would provide readers with *“a sense of what the theme is about”* (Braun and Clarke, 2006, pg 23).

*Phase 6: Producing the report*

The sixth and final phase required the researcher to write a comprehensive, interesting and analytical narrative of the thematic analysis.  Braun and Clark, (2006) argue that this phase aims to tell *“the complicated story of your data in a way which convinces the reader of the merit of your merit and validity of your analysis”* (p.23).  Of vital importance in this task, was the researcher’s ability to balance the use of meaningful extracts of data within the account presented.  Given the researcher had only once undertaken a full thematic analysis, trying to achieve this balance was problematic.  Initially during this write-up phase, the researcher included too many data extracts amongst the analytical narrative in a bid to demonstrate either the prevalence or the importance of the theme.  A process of review and reflection under academic supervision, assisted the researcher in identifying which extracts would most effectively illuminate or illustrate the story being told.

**5.6 Quality in research**

The issues of quality and quality criteria across various research disciplines have become increasingly more apparent, with unique methodological challenges being identified for achieving and assessing quality in mixed methods research (Bryman et al., 2008; Wisdom, 2012).  As detailed in section 4.4 and in recognition of the fact that there is more to mixed methods research than its individual strands, the researcher has committed to adopting an overarching quality framework for reporting mixed methods studies (O’Cathain et al., 2008).

In addition to this, an ‘individual components approach’ (O’Cathain, 2010) will be utilised, where specific quality issues and separate quality criteria pertinent to each phase of the research will be assessed and reflected upon in depth.  The decision to utilise this approach is based on widely proposed belief that sufficiently rigorous mixed methods studies, require both the quantitative and qualitative components to adhere to recognised quality criteria in their respective fields (Bryman, 2008; Curry et al., 2009; Teddlie and Tashakkori, 2009; O’Cathain, 2010; Creswell and Plano Clark, 2011).  Furthermore, *“because researchers collect, analyze, and interpret both forms of data, traditional approaches to validity should not be minimized in mixed methods research”* (Creswell and Plano Clark, 2007, p.146).

Consequently, the issues of quality and rigor and the proposed relevant criteria for assessing each will first be considered for the qualitative phase and then latterly for the quantitative phase (chapter 7).

5.6.1 Qualitative quality criteria

There is much debate about whether the same concepts for assessing quality in quantitative research can be applied to qualitative research (Pope and Mays, 2006; Ritchie et al., 2014). Typically, the concepts of validity and reliability are important criteria for establishing and assessing the quality of quantitative research (Punch, 2014). However, academics have argued that the quality of qualitative research cannot be determined by the same concepts or set of criteria as in quantitative research (Mays and Pope, 1995).  Consequently, alternatives have been proposed to those concepts or criteria traditionally developed in the natural sciences and quantitative social science (Ritchie et al., 2014)

Despite the absence of a universally agreed criteria for assessing quality in qualitative research (Snape and Spencer, 2003), arguably the most well-known and cited is that by Lincoln and Guba, (1985) and Guba and Lincoln (1994).  Their work proposes two primary criteria - trustworthiness and authenticity to assess quality in qualitative research.  Trustworthiness involves establishing four criteria - credibility, transferability, dependability and confirmability.  Below examines each of these four criteria in turn, in addition to presenting how the researcher employed techniques for enhancing each throughout the qualitative phase.

*Credibility*

Credibility refers to whether the findings are *“credible to the constructors of the original multiple realities”* (Lincoln and Guba, 1985, p.296), i.e. establishing the confidence that can be placed in the truth of the phenomena under scrutiny (Merriam and Merriam, 1998; Shenton, 2004). Fundamentally credibility establishes whether or not the findings represent plausible information drawn from the participants’ original data and is a correct interpretation of the participants’ original views (Guba and Lincoln, 1994; Graneheim and Lundman, 2004).

In addition to the robust approach employed to accurately obtain data for analysis (audio recording, systematic transcription process), the following strategies to enhance credibility (Lincoln and Guba, 1985) were utilised within the qualitative phase of the research -

Peer debriefing – Throughout the data collection and analysis process the researcher committed to regular opportunities for external scrutiny and reflection from peers.  Academic supervisors, an additional academic advisor (based at The University of Birmingham) and an expert peer (secondary headteacher not involved in the research) assisted the researcher in uncovering any bias, perspective or assumptions that could affect her position towards the data and analysis.

Negative case analysis – During the process of thematic analysis, the researcher searched for and discussed with academic supervision, elements of the data that contradicted both emerging and identified patterns in the data set.  Given the concurrent nature of data analysis, identified deviant cases were tested in subsequent interviews.  Within the qualitative findings (chapter 6), where negative cases exist, these were reported to improve credibility.

*Transferability*

Transferability refers to extent to which the qualitative findings can be transferred to other contexts with other participants (Bitsch, 2005; Tobin and Begley, 2004). Despite qualitative findings tending to be *“oriented to the contextual uniqueness and significance of the aspect of the social world being studied”* (Bryman, 2016, p.384), enhancing transferability enables others to make judgements about whether the findings could fit into contexts outside of the study situation (Merriam and Merriam, 1998).  According to Bitsch (2005), the *“researcher facilitates the transferability judgment by a potential user through thick description’ and purposeful sampling”* (p.85), thereby enabling a reader evaluate, whether the conclusions drawn are transferable to other times, settings, situation and people.  The following strategies particular to this criteria were therefore employed to enhance the transferability of the qualitative findings (Lincoln and Guba, 1985; Bryman, 2016).

Thick description *–* A comprehensive account of how this study was conducted has been provided throughout the thesis and within this qualitative methodology chapter.  This account has included the provision of a detailed overview of the research context and setting, in addition to ‘thick’ descriptions of all procedures employed during data collection and analysis.  Furthermore, within the qualitative findings chapter (chapter six), the researcher committed to embedding verbatim quotations of participants throughout the presentation of an analytical narrative.

*Dependability*

According to Bitsch (2005), dependability refers to the stability of findings over time, i.e. whether *“results would be the same, were the study replicated with the same or similar participants in a similar context”* (p.86).  Credibility and dependability as two criteria for trustworthiness are argued to be closely tied, although Lincoln and Guba (1985) suggest that evidence of the former assists in ensuring the latter.  The use of an *“audit trail”* is important to enhance and establish dependability (Bryman, 2016, p.384).  An audit trail enables a researcher to account for all the decisions made during the process of collecting, recording and analysing data.  Consequently, for the purpose of this qualitative phase the following was undertaken:

Audit trail – Complete records from both the original conception of the research project right through to its final reporting have been kept.  This has facilitated if required, the ability for academic supervisors and both internal/external examiners to be able to act as auditors in establishing establish whether the researcher has followed appropriate and reported procedures.  The audit trail includes complete records of the following:

* Communication with participants both before and after data collection
* Fieldwork notes
* Verbatim (anonymised) interview transcripts
* Monthly academic supervision meetings where decision-making processes and outcomes from peer-debriefing were recorded.

Code-recode strategy – The researcher spent approximately two months coding and recoding study data as part of the thematic analysis.  Results from separate coding exercises were compared under academic supervision frequently over this period of time to establish whether codes and resultant themes/sub-themes remained stable over time or were different.  Over time, the increasing agreement in coding results enabled the researcher to gain an in-depth understanding of patterns within the data set.

*Confirmability*

Confirmability is concerned with showing that the researcher *“has not overtly allowed personal values or theoretical inclinations to sway the conduct of the research and the findings deriving from it”* (Bryman, 2016, p.386).  Despite it being impossible to achieve complete objectivity in qualitative research, in order to enhance confirmability, researchers are expected to be explicit in their personal values, beliefs and biases (Shenton, 2004; Morrow, 2005). A common and widely promoted approach to enhancing confirmability is the importance of practising reflexivity (Teddlie and Tashakkori, 2009; Creswell, 2014).

Reflexivity is a critical process, relevant for both quantitative, qualitative and mixed-methods research.  Defined as, *“thoughtful, conscious self-awareness”* (Finlay, 2002a, pg 532), particularly pertinent to qualitative methods, but not exclusively, reflexivity should occur throughout the entire research process, including design, collection and interpretation of data (Jootun et al., 2009). Whilst total reflexive awareness is unlikely to be achieved, engaging in explicit self-awareness will enhance the integrity and trustworthiness of the study’s findings (Patton, 1990; Finlay, 2002b). Part of the reflexive process is being transparent about one’s own background and experiences (Davies and Dodd, 2002; Starks and Trinidad, 2007).

In addition to the audit trail previously mentioned, throughout the research process, the following techniques were utilised to enhance confirmability:

Researcher position – Presented earlier in the thesis, the researcher reflexively presented her ‘position’.  Detailing both her professional and personal background and history, the researcher committed to overtly identifying factors which could result in affecting aspects of the research process.

Reflexive journal – The researcher committed to writing reflexive notes both in hard copy and electronic form.  These notes centred on recording personal reflections throughout the research process regarding the decisions made, experiences gained, challenges faced and problems solved.  Furthermore the use of peer review and debrief with both academic supervisors, academic advisors and peers was crucial in developing a reflexive and introspective approach to conducting research.

**5.7 Ethical approach and procedures**

An important aspect of research quality is the consideration and application of a robust ethical approach and related procedures (Spencer et al., 2003; Bryman, 2016).  This section will examine how the importance of research ethics and how this study inclusive of both phases was guided by key ethical principles.  In addition and more specifically to the qualitative phase, this section will then discuss the ethical procedures employed and adhered to during the process of participant recruitment, data collection and analysis.  The ethical procedures relevant to the quantitative phase of the research study are discussed within chapter seven.

The nature of collecting data from people and about people means that researchers should consider ethical issues throughout an entire research process (Punch, 2013), and adhere to values of honesty and scientific integrity (Brinkmann and Kvale, 2008).   The principles of ethics are widely discussed in research methods texts with broad consensus evident about what constitutes ethical research (Pope and Mays, 2006; Punch, 2009; Creswell, 2014; Ritchie et al, 2014; Bryman, 2016).  In the main, this consensus centres on the need for researchers to consider the following issues or key ethical principles:

* Research should be worthwhile and should not make unreasonable demands on participants
* Participation in research should be based on informed consent
* Participation should be voluntary and free from coercion or pressure
* Adverse consequences of participation should be avoided and risks of harm known
* Confidentiality and anonymity should be respected

(Ritchie et al, 2014, p.78)

In addition to featuring in an extensive range of research texts, these key principles also feature throughout The University of Sheffield’s ‘Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue: Version 6’.  As a researcher at The University of Sheffield, this policy guided the researchers approach and conduct throughout both phases of the study, ensuring both samples in the qualitative and quantitative phases had their rights protected.  Furthermore, to support this process the study received ethical approval from the ScHARR Research Ethics Committee (SREC) in December 2015 (reference number 006808 - Appendix H).  Given that the exact methodology and data collection tool for the quantitative phase couldn’t be developed until the qualitative phase was completed (i.e. due to the exploratory sequential design), it was agreed by the SREC that the researcher would submit an ethics amendment prior to the commencement of the second phase.  This was undertaken and the amendment was approved by the committee in November 2016 (reference number 006808).

Based on the key ethical principles identified by Ritchie et al., (2014), table 5.1 presents how each were addressed during the qualitative phase.  As previously mentioned, chapter seven, details how the same ethical principles were addressed during the quantitative phase.

Table 5.1 - Ethical Principles and how these were addressed in qualitative phase of study

|  |  |
| --- | --- |
| Research should be worthwhile and should not make unreasonable demands on participants | It was established during the process of confirmation review (PhD upgrade) and obtaining ethics approval that the research was worthwhile and of some value given its potential for contributing to a valuable evidence base.    In addition, during the process of ethical approval it was confirmed that the qualitative phase and proposed methodology did not make unreasonable demands on participants.  Despite this, it was important for the researcher to recognise the considerable time commitment of participating in face to face interviews and consequently ensure minimal demands were placed on their time.  Interviews were therefore conducted at the participants chosen location and at a date and time convenient to each.  It was also deemed important to recognise their investment of time, so after the completion of each interview, a personalised email was sent to participants thanking them for their contribution. |
| Participation in research should be based on informed consent | Adopting best practice (Bowling, 2014; Bryman, 2016), all participants were fully informed and consented about the research process both prior to, during and after data collection.  At the point of recruitment and therefore in advance of data collection, each participant was provided with a Participant Information Sheet and Consent Form (Appendix I and Appendix J).  The Information Sheet provided:     * A comprehensive overview of the proposed research * An outline of the participants expected role including details about potential risks and benefits of participation * An explanation about voluntary participation and the right to withdraw at any point, without consequence * The data management procedures * The researchers and academic supervisor's contact information and information about complaint procedures     Prior to each interview commencing participants were given the opportunity to query details within the Information Sheet or pose any questions about their participation in the research.  Once confirmation of willingness to participate was established, the researcher asked for the consent form to be signed.  The researcher obtained both verbal and written consent (in the consent form) for the use of audio recording.  No participant objected to the use of audio recording or withdrew his/her consent to participate.  Once the data had been collected, the follow-up emailing thanking each participant for their contribution also included an assurance that if any further queries arose then the researcher could be contacted. |
| Participation should be voluntary and free from coercion or pressure | Regular opportunities were made available pre, during and post data collection for participants to withdraw their agreement to take part without penalty or consequence.  Furthermore both the information sheet and consent form explicitly detailed that participation was on an entirely voluntary basis and consent could be retracted at any point.  This approach hereby aimed to respect the fact that consent is dynamic in nature and a continual and evolving process rather than a single action (Pope and Mays, 2006).    No incentive was offered for participants to take part in the study.  In addition, whilst an explanation of the potential benefits of participation (related to the future impact of the research) were provided, in accordance with best practice (Ritchie et al, 2014), caution was used to not over claim the potential benefits and thereby indirectly pressure agreement to participate. |
| Adverse consequences of participation should be avoided and risks of harm known | Potential adverse consequences or risks were assessed and outlined within the ethics application to the ScHARR Ethics Committee.  It was anticipated that minimal (if any) harm would result from participation in the interviews.  The only potential and minor issues proposed were:   * The time demands on participants to take part in the interview * Participants may feel uncomfortable about sharing or answering certain questions related to their views or experiences * Participants may feel concerned about the  use of personal information, i.e. contact details, school information     To address these issues, as discussed previously interviews were arranged around participant schedules.  Secondly participants were assured that they were free to decline answering any question posed without penalty or consequence.  Lastly a detailed description both in the Information Sheet and verbally was provided to participants about the robust approach to managing data and ensuring confidentiality and anonymity (explained in latterly in the table). |
| Confidentiality and anonymity should be respected | Participants were assured their privacy would be protected at all times and were fully informed of the information governance systems in place for the study (Polit and Beck, 2012).    Ways of protecting participants’ confidentiality and ensuring participant anonymity were explicitly stated in the Information sheet and discussed with participants prior to their participation in this research.  Information collected from participants were treated and handled in strict confidence.    The following information governance and data management procedures were adopted during the qualitative phase of the research:     * All electronic data sources including audio files, typed transcripts and emails were either saved and backed up in password-protected folders on a secure server approved by The University of Sheffield or where relevant deleted (i.e. audio recordings).  Folders were only accessible by the researcher and were assessed on a computer with firewall, antivirus software and alphanumeric password protection. * Consent forms (in paper form) signed by both the researcher and the participant were scanned, emailed to the participant and the electronic file saved onto the approved secure server.  The paper copy was then securely shredded and destroyed. * All interviews were transcribed verbatim with any personal information, which would enable the participant to be identified (e.g. name, school name, location) anonymised or removed by using a coding system only known to the researcher. |

**Chapter 6**

**Qualitative findings**

**6.1 Introduction**

This chapter presents the findings from the qualitative phase of the study.  Beginning with an overview of participant demographics and their respective school’s characteristics, the final stratified sample is detailed.  Following this, the chapter provides an overarching summary of the qualitative findings in respect to the themes identified from the conducted thematic analysis.

The remaining part and indeed the majority of this chapter presents an in-depth exploration and commentary of each of the resultant four themes and related sub-themes. Verbatim quotations taken from the interview transcripts are utilised to illuminate and illustrate the findings, whilst providing an insight into the relevance and context of each theme.

**6.2 Participant demographics and school characteristics**

The final sample of 22 interview participants, was made up of 13 headteachers (eight males, five females) and nine chairs of governors (six males, three females), all employed (headteachers) or elected (chairs of governors) within their respective secondary schools at the point of data collection.  The average age of headteachers participating was 51.8 years, with the average age of chairs of governors 61.4 years. An overview of the participants is presented in Table 6.1 and includes the overall number of participants relative to their respective school’s characteristics (stratas).

Table 6.1 - Overview of participants (qualitative phase)

|  |  |
| --- | --- |
| **School characteristics (Stratas)** | **Number (Total = 22)** |
| **School type**  Community  Academy (converter mainstream)  Academy (sponsor led)  Voluntary aided  Independent | 4  6  8  1  3 |
| **Pupil population**  ≤ or equal to the England average of 939  ≥ or equal to the England average of 939 | 13  9 |
| **% free school meals\***  ≤ or equal to the England average of 13.2%  ≥ or equal to the England average of 13.2%  Missing or not applicable | 1  19  2 |
| **Ofsted performance rating**  1 (Outstanding)  2  3  4  Missing  Not applicable (As not assessed by Ofsted) | 1  11  3  4  1  2 |

**\***FSM percentage - Average % of children eligible for and claiming free school meals during data collection period of Jan-May 2016).

In order to provide context to the participant quotations included, table 6.2 provides a detailed summary of individual participant characteristics.  This enables the understanding of each quotation to be informed by the knowledge of which role and what stratas each participant's represents.  To maintain anonymity, any information which could result in participants being identifiable has been presented within ranges, i.e. participant age, length of time in role and their schools free school meal percentage.

A lack of publically available information regarding headteachers’ and chairs of governors’ demographics means reflecting upon the representativeness of the final sample is challenging. Only the gender ratio of headteachers in state-funded secondary schools is published (61.% males and 39% females), (Department for Education, 2014). Of the 10 headteachers interviewed from state-funded secondary schools interviewed, 60% were males and 40% were females, indicating a broadly similar ratio to the national published statistics.

In relation to the demographics of the secondary schools represented, the Department for Education (DfE), reports annual statistics related to English state funded schools, pupils and their characteristics (Department for Education, 2016b). Comparisons between the state-funded schools represented and reported national statistics, indicates that the final qualitative sample was overrepresented by academy school types (73.7% compared to 58.6%) and schools with a higher than average free school meal percentage of 13.2% (Department for Education, 2016b).

Table 6.2 - Individual participant characteristics (qualitative phase)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Participant number** | **Headteacher or chair of governors** | **Participant Gender/**  **Age/length of time in role\*** | **School type**  **Gender/Age/length of role?** | **Free school meal percentage\*\*** |
| 1 | Headteacher | Female/51-60yrs/ 11-15yrs | Academy | 20-25% |
| 2 | Chair of governors | Female/61-70yrs/1-5yrs | Academy | 20-25% |
| 3 | Chair of governors | Male/61-70yrs/6-10 yrs | Academy | Over 60% |
| 4 | Chair of governors | Male/51-60yrs/6-10yrs | Academy | Over 60% |
| 5 | Headteacher | Male/41-50yrs/6-10yrs | Other independent | N/A |
| 6 | Headteacher | Male/41-50yrs/6-10yrs | Academy | 36-40% |
| 7 | Headteacher | Female/51-60yrs/1-5yrs | Other independent | N/A |
| 8 | Headteacher | Female/51-60yrs/6-10yrs | Academy | 16-20% |
| 9 | Headteacher | Male/41-50yrs/6-10yrs | Community | 26-30% |
| 10 | Headteacher | Male/31-40yrs/1-5yrs | Academy | Over 60% |
| 11 | Chair of governors | Female/41-50yrs/1-5yrs | Community | 21-25% |
| 12 | Chair of governors | Male/51-60yrs/1-5yrs | Community | 11-15% |
| 13 | Chair of governors | Male/71-80yrs/6-10yrs | Voluntary aided | 26-30% |
| 14 | Headteacher | Male/51-60yrs/6-10yrs | Other independent | N/A |
| 15 | Chair of governors | Male/61-70yrs/6-10yrs | Academy | 16-20% |
| 16 | Headteacher | Male/51-60yrs/1-5yrs | Academy | 16-20% |
| 17 | Headteacher | Female/61-70yrs/6-10yrs | Academy | 16-20% |
| 18 | Chair of governors | Male/61-70yrs/Less than 1 year | Academy | 41-45% |
| 19 | Headteacher | Male/41-50yrs/11-15yrs | Academy | 41-45% |
| 20 | Chair of governors | Female/51-60yrs/1-5yrs | Community | 51-55% |
| 21 | Headteacher | Male/41-50yrs/Less than 1 year | Academy | 41-45% |
| 22 | Headteacher | Female/61-70-yrs/11-15yrs | Academy | 36-40% |

\* Length of time in role - related to current and any previous positions

\*\* FSM percentage - % of children eligible for free school meals at any point in the last six years (correct at point of data collection - Jan-May 2016).

**6.3 Overview of themes**

The process of thematic analysis, led to the development and emergence of four themes: 1) perceptions of adolescent obesity and lifestyle behaviours, 2) influence of place, 3) shared responsibilities, collective solutions and 4) the secondary school setting.  Within these four main themes, a number of further sub-themes emerged from the process of analysis and these will be described in turn. A visual representation of the themes is presented in figure 6.1.

Despite each theme presenting distinct aspects of the qualitative findings, collectively they form a connected and interrelated narrative of participants’ perspectives.  The first theme encapsulates headteachers’ and chairs of governors’ views on the existence and variations of excess weight and related lifestyle behaviours in adolescence.

Offering explanations for this existence and variation, the second theme explores the perceived causative or associative factors within an adolescent’s context that influence weight status, dietary and physical activity habits.

Following on from these identified influences, the third theme presents participants views about who is responsible for preventing excess weight gain, which approaches would be effective to achieve effective prevention and what partnerships should be formed in order to support preventative action.

Given that secondary schools were identified as having both responsibility towards, and a role within, excess weight prevention, the fourth theme explores this setting in more detail.  In addition to describing internal activity contributing to excess weight prevention, this last theme presents participants perspectives about key factors within a secondary school setting affecting both their ability and desire to undertake preventative action.

**Thematic map**

**1) Perceptions of adolescent obesity and lifestyle behaviours**

**2) Influence of place**

**3) Shared responsibility, collective solutions**

**4) Secondary school settings**

Issue of obesity prevalence

Dietary habits and preferences

Physical activity and sedentary behaviour

Wider health and well-being

Home environment

Wider food environment

Deprivation

Continuum of responsibility

Approaches to behaviour change

Importance of partnerships

behaviour

Action contributing to obesity prevention

Competing priorities

Role modelling

Leadership and governance

Figure 6.1 Thematic map of qualitative findings

6.3.1 Summary of individual themes

The first broad and overarching theme related to participants’ perceptions of adolescent obesity and lifestyle behaviours.  All participants provided various, and at times differing beliefs about the current prevalence of excess weight within adolescence.  Whilst most acknowledged an escalating problem of obesity within society, typically for many this was not reflected in their secondary school population.  Broader than the issue of obesity, was the changing and at times concerning perceptions of adolescent lifestyle behaviours, including dietary and physical activity habits both inside and outside the secondary school setting.  Resulting from or contributing to these behaviours, were wider health and well-being issues perceived to be being experienced by pupils at their school.

The second key emerging theme links to the first, and explores participants’ beliefs about the connection between adolescent obesity and lifestyle behaviours and the influence of place.  There was the perception that at its most simplistic level, obesity is caused by an energy imbalance, resulting from excessive and inappropriate food and drink consumption and inadequate participation in physical activity.  Despite this, the universal belief was that explaining obesity as a mere unbalanced ‘equation’ was overly simplistic. Driving this perception was the collective view that the places in which adolescents live, have an influential role in determining an achievement of energy balance.  In regards to place, participants referred to multiple and complex factors within an adolescents’ economic, geographical and social context that shape and determine obesity prevalence and lifestyle behaviours and also long term educational, employment and social outcomes.  Most notably, the home environment (more specifically the impact of parents), wider food environment and deprivation were frequently focused upon and discussed in regards to the influence of place.  Despite these being outside of a school setting, all three areas of focus were deemed to positively or negatively impact upon a school’s ability and desire to prevent adolescent obesity.

Given participants strong belief that obesity presents a substantial health and financial burden on society and therefore requires addressing, presented in the third main theme are participants’ perspectives about who has responsibility for preventing the issue.  Frequently headteachers’ and chairs of governors’ views moved interchangeably along a continuum with personal responsibility and societal responsibility representing the extremes at either end.  Participants often presented opposing views to others, or in fact to their own previously shared perspective.  What was consistent however was the shared consensus that within collective responsibility for prevention, key stakeholders have distinct responsibilities and should perform specific roles.  The remainder of this theme, explores the variable beliefs regarding the effective behaviour change approaches for preventing adolescent obesity, unhealthy dietary and physical activity habits.  These range from education and raising awareness to legislation and taxation.  Lastly, in order to deliver behaviour change approaches, the concept and importance of building partnerships between schools and organisations in the public and private sector are discussed.

The final theme focuses on the secondary school setting itself and presents an overview of current action deemed by participants to contribute to the obesity prevention agenda.  Participants expressed a desire and commitment to developing the whole child including taking action to improve adolescent lifestyle behaviours.   However key factors within the secondary school setting, were deemed to affect the ability and desire to undertake this action.  Of most significance were the challenges associated with competing priorities between schools and the government.  Two other topics, role modelling and the leadership and governance were also repeatedly described by participants and both perceived to influence the way in which prevention is embedded into their school setting.  The latter sub-theme is of particular importance, given the specific interest in the role of headteachers and chairs of governors in relation to excess weight prevention.

**6.4 Perceptions of adolescent obesity and lifestyle behaviours**

6.4.1 The issue of obesity

Participants universally acknowledged that across society the issue of overweight and obesity was both apparent and escalating.  This perception was predominantly related to the prevalence of excess weight in the adult population, with both headteachers and chairs of governors expressing concern or worry about the perceived scale of the issue.  Reference was made to how national obesity levels have increased over time and direct comparisons were drawn by some participants between UK prevalence and that of other countries, most notably America:

***“****It frightens me nationally, it does frighten me levels of obesity, you only have to walk down a high street, or the shopping centre.”*  **Participant 6 (Headteacher)**

**“***We all knew about America, everybody knew about America and almost held that up as you know we’re nowhere near as bad as that and never will be and actually the statistics increasingly point at the fact that we are approaching the magnitude of the problem that America have.”*

**Participant 18 (Chair of governors)**

Whilst there was general recognition that obesity was a problem within society, there was variation in whether participants felt this translated into an issue within their secondary school setting.  Most reported concerns about isolated cases of obesity in their pupil population, however in the main, both headteachers and chairs of governors felt that it was not a significant problem for their school.  This view was shared consistently across all the school stratas sampled for.

*“It’s an issue for individuals in the school, but I don’t see it as a global issue for our kids.  I would say lack of physical exercise is an issue, but it's not manifested itself into obesity, an obesity epidemic similar to if we were to walk down the local high street.  It doesn’t smack you in the face.”*

**Participant 9****(Headteacher)**

Furthermore, a few posed the question as to whether there was an excessive focus on identifying or assessing obesity during childhood and adolescence.  Driving this view for some, was the belief that excess weight could be merely attributed to ‘puppy fat’ resulting from puberty, which would likely dissipate or shed during adolescence.  Consequently, concerns were raised about unfairly labelling or targeting children and adolescents.

*“I do think sometimes that at that particular age when puberty is setting in and things there is an element, you do put a little bit of weight on, it’s all chubby, puppy fat and it will all drop off, I do think there is an element of that.”***Participant 11 (Chair of governors)**

In stark contrast to the broad consensus amongst participants that only a limited proportion of secondary school aged children are of excess weight, a small minority presented obesity as a definite, serious and worrying issue within their secondary school.

*“We have got significant number of students who are fat, are obese, are clinically obese, we have.”* **Participant 22** **(Headteacher)**

For those who identified isolated cases of obesity and those expressing greater concerns about their schools growing obesity prevalence, frequent reference particularly from those with a higher free school meal percentage was made to a perceived link between obesity and socio-economic status.  Participants from these schools highlighted a belief that excess weight disproportionately affected pupils and their families from the deprived communities within their catchment.

*“The school sits within one of the most deprived areas of the local authority and you’ve got a correlation between excess weight, obesity and deprivation.”***Participant 20 (Chair of governors)**

One participant however contradicted the majority view, by acknowledging that in spite of the potential association between excess weight and deprivation, this did not appear to be evident in his school in his school.

*“So I would say, despite it being certainly being an area of deprivation, it doesn’t translate into a particular problem with weight.”***Participant 13** **(Chair of governors)**

Paradoxical to the issue of obesity, were perturbations raised regarding underweight in adolescence, especially in relation to girls from *‘middle class families’* and schools with higher proportions of migrant populations.  Those raising the problem of adolescents being below a healthy weight, proposed it as a more significant problem in terms of outweighing both the perceived scale and severity of excess weight in their secondary school.  No clear pattern existed between those sharing this viewpoint and the school stratas they represented.

*“Yeah, I think, our young people are really body conscious and strangely enough it means that some of them don’t have good eating habits, some children go without food to look good, we’ve got lots of middle class girls actually who hide their lack of weight or, or, or their slim figure under their, under their t-shirts and sometimes it's difficult as teachers to sort of spot that.*”  **Participant 8 (Headteacher**

Collectively, participants reported their assessment of the issue of obesity within their school was based on a visual estimation or judgement.  Both headteachers and chairs of governors referred to identifying obesity exclusively by sight.   For some, media representations and stereotypes of obesity both nationally and internationally (especially in America) were used as a reference point to guide understanding of what an unhealthy weight looks like.  A perceived lack of data or access to data regarding excess weight in secondary school aged children, meant the requirement for participants to rely almost entirely on visual assessment and the subjective view of what a healthy or unhealthy weight looks like.

*“You can visibility see it.  I mean, I wouldn’t know above a healthy weight, slightly overweight, I wouldn’t know that, but if you walked around the school a lot of the children look a healthy weight, but there are some big boys and girls, particularly girls.”***Participant 1 (Headteacher)**

*“There has been no scheme or plan as far as I’m aware to actually detail how many obese children we’ve got. I think it’s been done more by sight rather than any professional measurement.”* **Participant 15 (Chair of governors)**

Some headteachers and chairs of governors reflected upon the effectiveness or appropriateness of using visual assessment as a measure for identifying excess weight in either children or adults.  The accuracy of this approach and its potential limitations were discussed, with conclusions being drawn about how increasing obesity prevalence nationally could impact upon on people's perceptions of what is the ‘norm’.

*“So here’s another question, am I fooling myself, if I think I can judge the level of obesity in the school I’m co-chair by visually inspected, full dressed obviously, eye-balling the students or do you need to be an expert, to know whether somebody is either obese or you know, marginal to it?”*

**Participant 4 (Chair of governors)**

*“Now my wife in my view is a perfect size ten, she is a size ten, she is not thin, she is slim, she is a size ten. But that in our society now is abnormal, that’s our issue, our issue is that being overweight has become normalised.  As soon as the majority of society are technically and I keep on using that term because it depends on the measure, overweight than people who are overweight, will increasingly, their default position will be “I’m not overweight, I’m normal, I’m average.”*

**Participant 18 (Chair of governors)**

A minority of chairs of governors expressed an inability to confidently confirm whether obesity was an issue or comment more broadly on the lifestyle behaviours, i.e. dietary or physical activity habits of their school’s pupil population.  This was attributed to having limited face to face interaction or contact with students, and the fact that excess weight either in relation to prevention or management had never arisen as a topic for discussion at governance meetings.

*“I think if you were to, I think if the governing body were around this table, I think if you were to ask them how many children that were in the school that are obese the numbers, would well there would be all kinds of numbers.”*  **Participant 15 (Chair of governors)**

In spite of this, chairs of governors drew on knowledge and observations of obesity more broadly and often related to personal or familial experiences in order to reflect on the issue.

6.4.2 Dietary habits and preferences

The perceived dietary habits, nutritional choices and food preferences of children and adolescents were extensively discussed by all participants, both in relation to obesity and as topic within their own right.  In the main, headteachers and chairs of governors presented substantial worry and at times shock regarding the type, amount and quality of food intake by adolescents, primarily outside of their respective school setting.  Broadly speaking the perception was a worsening of adolescent diets over a period of decades, with multiple, competing and complex influences affecting this problem (explored in theme two).  A few participants made the connection that some pupils who were visually deemed to be of excess weight, were also witnessed within school settings to adopt poor dietary habits.

*“Visually and the fact that they might be the same children who come in with large family  sized bags of crisps and soft drinks as their breakfast.”***Participant 10** **(Headteacher)**

Headteachers and chairs of governors often reported that identifying dietary habits assisted in providing a gauge to assess both current health of a pupil or more often predict the future likelihood of obesity and health problems occurring.

*“I think it’s probably more to do with how I see them, how I see them eat, drink, how they act on a general day to day basis…..but even though it’s probably not manifest now that there’s an obesity issue you can see there will be if they continue doing what they’re doing.”*

**Participant 21 (Headteacher)**

For the majority, adolescent dietary habits at a local, i.e. school setting and on a national level presented a degree of concern that superseded the issue of obesity.  Reasons for this centred on the belief that poor dietary habits were a problem for a larger proportion of adolescents in comparison to obesity, and that unhealthy nutritional choices negatively impacted upon behaviour and academic performance.  Whilst obesity was linked to bullying and resultant mental health problems, mixed opinions existed as to whether excess weight could directly impact upon academic outcomes.  A recurring example of extremely concerning dietary habits given by both headteachers and chairs of governors, related to particular problems associated with breakfasts (predominantly lack of) and the consumption of sugary or energy drinks outside a school setting.

*“You do see kids eating crisps on the bus on the way to school and you see kids eating chocolate on the way to school and you think to yourself did they get a decent breakfast.  I’m sure that breakfast is a big issue*.”  **Participant 3 (Chair of governors)**

*“[...] every kid turns up in the morning you know, not every kid, but lots of children and “I bought this, this is the drink my mum sent me in with”, there’s twelve grams of sugar in that bottle as well as every e (number) you could possibly imagine.”* **Participant 6 (Headteacher)**

In addition to challenges associated with breakfast and energy drinks, participants extensively discussed problems with adolescent intakes of and preferences for junk food, sugary fizzy drinks and snacks high in sugar, fat and salt.  Excessive portion sizes and the over reliance on processed, convenience foods were again proposed as a worry.  Typically these views centred on dietary habits either outside of the school or were reflective of food being brought into school during the day.

*“Even parents don’t know what their children are eating because you know they give them money and there are children that don’t eat lunch or they’ve eaten it at break time and it’s been a bag of crisps and a chocolate bar.”***Participant 8 (Headteacher)**

*“There was as girl there who only ate chips while she was away, so that’s the problem, that’s the problem. I said to her “are you vegetarian?” [..]..“no, no, I just eat chips”.*

**Participant 14 (Headteacher)**

On balance, there were some participants, albeit a smaller proportion who presented the opinion that there had been improvements in child and adolescent knowledge and dietary habits, often in respect to increases in fruit and vegetable consumption.

*“We’re seeing children come through to secondary school that are used to not having chips everyday, that are used to choosing vegetables and fruit and salad and things like that.”*

**Participant 11 (Chair of governors)**

Despite isolated reports of improving nutrition, the overwhelming portrayal of current dietary habits were negative, in relation not only to adolescents, but more broadly when discussing behaviours of children, families and the communities their schools served.  Furthermore, for those who had identified positive changes in adolescents diets, these were not universally applicable to all pupils within a school setting and were typically reported by either schools with lower free school meal percentage or independent schools.  The relationship between unhealthy eating practices and socio-economic status, appeared evident to participants in a similar way to the connection made between obesity prevalence and deprivation.  Whilst poor dietary habits were frequently observed across the social and demographic spectrum, adolescents from more deprived communities were perceived to have the worst food preferences and nutritional intake.

*“And even kids on free school meals you know you’ve got one pound or whatever to spend, but actually your family is so poor that the only food you see in a day is your school meal, so they’ll take a whole stack of biscuits because they divide by three, ones for lunch, ones in the evening and the others for breakfast”.*  **Participant 20 (Chair of governors)**

6.4.3 Physical activity and sedentary behaviour

When discussing physical activity participation of adolescents, headteachers and chairs of governors referred to or shared perspectives on formal physical education, extra-curricular school activity, modes of travel, active recreation and leisure.  Greater variation and disparity of views existed surrounding adolescent physical activity participation than observed in the perceptions regarding obesity and dietary habits. Ranging from a serious and concerning picture of sedentary behaviour in adolescence, to a positive and optimistic experience of witnessing increasing physical activity engagement, a continuum of varying perspectives were evident.

*“Many of our boys and girls are very interested in sport and would do a large amount of time each week in terms of physical exercise.”*  **Participant 5 (Headteacher)**

*“When I talk to some students, you know, “what are you going to do this weekend?” “well I’m going on Call of Duty” “anything else? “no, that’s it, all weekend”. So there’s those sort of, so I sort of worry about the lack of exercise, lack of sport, and those sorts of things.”***Participant 21 (Headteacher)**

In balance, whilst not representing an overwhelming consensus, participants more typically reported a belief that the majority of adolescents were not undertaking enough physical activity.  In particular this related to low levels of participation in physical activity, sport and active recreation outside of a school setting.  Similarly to poor dietary habits, the impact of wider societal and environmental influences were perceived to primarily drive increases in sedentary behaviour (see theme 2).

“I*t’s just the modern static generation, well primarily static generation sitting in front of computers and on iPads and things like that.  And linked to that the fear of parents to let children go out and be and play out so if any exercise they do has to be organised, has to be paid for, has to be motivated by parents so I think it’s all round that sort of side of things.”***Participant 7 (Headteacher)**

*“The walking to school, they get driven to school, they’re going home and playing physically after*

*school has been replaced by sitting and watching, very static kind of and for me that’s the biggest contributory factor.”*  **Participant 17 (Headteacher)**

For those who perceived a more positive relationship between adolescents and physical activity participation, examples provided were usually in reference to school based physical education or extra-curricular activities.  This was especially relevant in independent schools, where uptake across the board was reported as extremely high.  Both headteachers and chairs of governors from all school types, proposed that offering a wide range of non-traditional school sports generated increases in participation within their setting, especially with adolescent girls,

*“We do cheerleading and stuff here in lessons, we do, in year eleven, we do, we do leisure options, they sign up to leisure options, we don’t call it sport or PE, so there's boys who choose football, there's girls who choose to play football and we have competitive teams, but in their PE lessons we’ve timetabled it so they’re in the afternoon so that we now do ice skating, we now go swimming, we now access basketball.”***Participant 6 (Headteacher)**

*“I mean, girls don’t want to play sport, well that’s absolute nonsense at our school, our girls want to play sport, we’ve got loads of sport teams, they love it and they’re not obese.”*

**Participant 14** **(Headteacher)**

The connection made between physical activity, sedentary behaviour and deprivation especially outside of a school environment, appeared to not be as pronounced as the link identified between obesity, dietary habits and deprivation.  Some participants presented escalating sedentary behaviour across the entire social spectrum regardless of socio-economic status.

*“I think there are variety, are common to young people these days regardless of poverty or not so, there are more sedentary than they historically they were, they spend more times in front of screens than they do outside exercising.”***Participant 20 (Chair of governors)**

6.4.4 Wider health and well-being issues

A strong and recurring belief that participants shared was the interconnection between obesity, lifestyle behaviours and what were perceived to be the wider health and well-being issues facing adolescents in the 21st century.  Of crucial importance to headteachers and chairs of governors was the significance of poor emotional well-being during adolescence.  Seen as both a driver of unhealthy lifestyle choices and a consequence resulting from them, the mental health of secondary school pupils was argued to be a more primary and pressing concern than physical health issues.

*“It’s about children’s well-being which is why we have a national pandemic of ill-health and mental health and that is linked to eating as well because we haven’t got the basics right with our children”.* **Participant 7** **(Headteacher)**

Headteachers and chairs of governors discussed the substantial complexities they associated with adolescent emotional well-being.  One of which being the belief from some, that an adolescent's mental health status is negatively affected by the increasing engagement in other unhealthy behaviours in addition to those associated with diet and physical activity. These included reduced sleep due to technology use, the access of pornography, addiction to social media and self-harm.  All were perceived to compound the issues of an unhealthy weight status (both related to obesity and eating disorders), negative body image, low self esteem, lack of confidence and the prevalence of mood disorders including anxiety and depression.

*“Well I think it goes hand in hand with what they’re eating and what we see it’s difficult to pull out the specific impact because there are clusters of behaviours that have certain impacts.  So we know that a lot of our children are sleep deprived, but if you add into the fact you know that they’re playing these games late at night and their parents can’t get their mobile phones off them, but if you add into the fact that they start breakfast with an energy drink, full of sugar and they haven’t, you know, they’re not eating fruit and vegetables, what you do see is poor concentration in classrooms.  It’s hard for us to know exactly the impact of diet as opposed to sleep deprivation cos we know they’re both harmful, but we are seeing it and I think in certain schools, they’re seeing it more and more.”*

**Participant 8 (Headteacher)**

In summary, this first theme has extensively explored participant’s varying perspectives on the prevalence of excess weight across society and in secondary school settings, including reflections on the process and accuracy of identification.  Whilst excess weight was not universally deemed a problem in secondary schools, concerns were raised about the increasing issue of unhealthy dietary habits and sedentary behaviour in adolescence.  Furthermore, wider health well-being issues related to mental and social health were highlighted as an escalating problem within their school setting.

**6.5 The influence of place**

As presented in the overview and summary of themes, three key areas of focus regarding the influence of place were identified, the home environment, the wider food environment and deprivation.  Individually and collectively, all three were perceived to influence the existence and variation of adolescent obesity and related lifestyle behaviours explored in the first theme.

6.5.1 Home environment

The home environment of secondary school pupils was unequivocally believed to be the most influential place, determining not only adolescent obesity, but wider health and well-being behaviours both in the short and long term.  Central to the influences within an adolescent's home environment, was the perceived role of parents.  Universally parents were deemed to be the most significant factor influencing adolescent obesity and whether and how an adolescent adopts healthy or unhealthy lifestyle behaviours.

*“The biggest influence on children are their parents, unequivocally, good or bad, for good or bad, we are the greatest influence on our children, they mimic us in lots of different ways, sometimes in subtle ways we don’t realise.”***Participant 18 (Chair of governors)**

A key issue for the majority of participants was how the lifestyle behaviours and weight status of parents impacts upon that of their children.  Most believed that having overweight or obese parents, would increase the risk of a child or adolescent being above a healthy weight.  Consequently excess weight was viewed as a familial problem, which in some home environments had become the normalised state, as opposed to an isolated issue for either children, adolescents or their parents.

*“Yeah, yeah, I mean, if your dad's enormous, that’s just what you’re used to, ok.”*

**Participant 4 (Chair of governors)**

*“We often have obese families, obese parents with obese children and then those obese children have obese children themselves”.***Participant 22 (Headteacher)**

Given their limited contact with pupils and their families, the assumptions made by chairs of governors regarding the prevalence of familial obesity were seemingly based on witnessing examples in their personal social network, in the media or generally observations from wider society.  Headteachers however often made reference to their direct experience of engaging with overweight or obese families in their secondary school setting, i.e. at parents’ evenings, school events.

*“We never really see overweight children in this school without overweight parents.  I mean some children of overweight parents are not, but if they are, their parents tend to be and it tends to be both.”***Participant 1 (Headteacher)**

One chair of governor reflected on his previous teaching experiences, where school staff at parents’ evenings would attempt to match school pupils and their parents by their weight status.

*“We used to say at parents evenings “if you want to know the child, know the parent” and we used to play a game, a parent would appear at the door and try and guess who that was, which child was that the parent of.*”   **Participant 18 (Chair of governors)**

Discussing the belief that parental obesity could influence child or adolescent obesity led to accusations of parental blame or fault.  Arguments by some were put forward, that parents were setting a bad example to their children and were therefore criticised for being poor role models.  Despite this perception, a more emphatic view was proposed at times, where parents were recognised to be a product of their own experiences and the geographical and social contexts in which they have lived.  Consequently simply blaming or attributing fault to parents was described by some as too simplistic given the complexity of the issue of obesity in society.

*“I’m a great believer that we quite often blame local authorities, schools, health visitors for things that go wrong rather than looking back at parents. I’m not saying I would blame parents and say “it’s your fault” because I think a lot of parents come, carry what has happened in their childhood so it’s actually where do you cut into that circle.”***Participant 15 (Chair of governors)**

A small minority of participants discussed whether the relationship between parental and adolescent obesity was hereditary, at times questioning whether children are born with a genetic physiological disposition to excess weight.  Despite this, greater emphasis was placed on the role of family culture within the home environment, as a key determining factor affecting not only the health and well-being of adolescents, but their educational, social and developmental outcomes more broadly.

All participants extensively discussed different aspects of family culture including how parental values, attitudes, habits, knowledge and rules have the potential to positively or negatively influence adolescent lifestyle behaviours and resultant weight status.  Some therefore proposed that if a family culture included the engagement in or promotion of unhealthy dietary habits and sedentary behaviour, adolescents were more likely to base their behaviour around these accepted familial norms.  Examples of unhealthy or obesity facilitating habits within a home environment included, the excessive consumption of convenience or fast food and the overreliance of screen based leisure activities.

*“Yeah I think you pick up habits don’t you, from those people around you, look up to and respect or even just those people you’re around because it sort of shows normality, so I dare say there’s probably a higher incidence of people who smoke whose parents were smokers than those who don’t and probably a higher incidence of people who eat massive grab bags [laughs] of crisps than those families who don’t.”***Participant 10 (Headteacher)**

The reverse was also deemed true however, where aspects of family culture were believed by some as being able to mitigate the potential wider social and environmental influences on adolescent lifestyle behaviours.  This perception was typically provided by participants from independent schools or schools with lower free school meal percentages, where health enhancing values and attitudes were typically associated with middle-class parents.

*“So you can have as many bottles of Coca-Cola and McDonalds tempting them as you like, they’re not going to go towards that unless you’ve got a family value that promotes and accepts it.”*

**Participant 17 (Headteacher)**

The concept of a health promoting family culture was discussed by a number of headteachers and chairs of governors in reference to their own home environments.  Many shared personal stories and details regarding how their own personal values and attitudes positively impacted upon their own children’s lifestyle behaviour.  Extensive examples were given regarding the activities, rules and approaches participants utilised in their home environment, to support their children’s adoption of healthy dietary and physical activity habits.

*“I’ve got two little kids myself, it’s something I try and do with them, they would, my two little kids would sit and watch YouTube all day everyday if I let them without a doubt you know, so I have to force them to get out”.*  **Participant 21 (Headteacher)**

A key aspect of the home environment and family culture frequently viewed as a critical determining factor, was the degree of parental knowledge and understanding around obesity and lifestyle behaviours.  Participants typically perceived parents of overweight or obese adolescents having a lack of awareness about how or indeed why to support healthier lifestyle decisions, in respect to themselves or their children.  This was especially pertinent in relation to dietary habits, where both headteachers and chairs of governors expressed substantial concern about the limited knowledge some parents seemingly have. This was often related to what constitutes healthy or unhealthy food and how to cook appropriately for their family.  Disproportionately these perceptions were shared by participants from schools with a higher free school meal percentage.

**“***I don’t think parents, they do, or they do understand, but they’re doing what’s quickest and easiest cos they’re working all day maybe so they’re putting convenience foods in without really understanding truly what it is they’re doing to the child and the message they’ve giving to the child as well, it’s not just about feeding them, it’s about the message as well, isn’t it, so.”*

**Participant 11 (Chair of governors)**

A smaller minority of both headteachers and chairs of governors reflected on their own lack of knowledge either currently or previously that had led to the adoption of unhealthy choices.

*“Having drunk Cola myself and trying to think why I drank them. I think I increasingly drank them as my diabetes developed to basically fulfil a craving for sugar and also to quench thirst whereas I would be a lot better off having drunk water or something similar. I didn’t have the knowledge that I have now”.***Participant 15 (Chair of governors)**

In addition to lack of parental knowledge, a significant issue existed for participants who believed that some of the parents at their secondary school, did not have or chose not to employ effective parenting skills in their home environment.  Therefore for many participants adolescent obesity and unhealthy lifestyles stemmed from a lack of parental control, boundaries and discipline.  Consequently, many participants proposed that in some home environments children and adolescents were allowed too much freedom and choice in regard to their dietary or inactivity habits.

*“I think parents not being prepared to parent, parents not being prepared to say to kids “no this is what” I sound like an old fashioned person, but you know “this is what you’re eating, this is what’s on the table, take it or leave it, no I’m not making a different meal because you don’t like it [laughs].”*

**Participant 7 (Headteacher)**

This problem for some headteachers and chairs of governors, was indicative of a wider issue in parts of society.  Frequent reference was made to albeit a minority of parents who appeared to devolve parental duties when it came to their child’s health and behaviour, in order to have an easier and more convenient life.

*“Parents who don’t really care, parents who regard television, coke and hamburger as a babysitter, that’s probably the route cause of it”.***Participant 13 (Chair of governors)**

“*Their behaviour. They’re coming from a television background, where they’ve not had a lot of parenting, where they’ve used a TV babysitter.”***Participant 17 (Headteacher)**

Due to this perception, a minority raised at times the extent to which poor parenting skills including around obesity and food could or indeed should present as an issue of care, safeguarding, abuse and care.

*“I do think though it is about health professionals working with parents, but there needs to be something in place, what do you do if a child’s three and they’re being overfed, you know that is, that’s neglect, so its poor parenting and its, you know, how do you change the behaviour of those parents?”***Participant 8 (Headteacher)**

The substantial range and complexity of influences within the home environment on an adolescent's lifestyle behaviours and weight status, led almost all of headteachers and chairs of governors to reflect on the potential impact for their school.  In the main, the influence of adolescents’ parents and the family culture within the home environment was deemed as having the power to either support or undermine any effort their school undertakes to improve adolescent health and well-being.

*“You can try, you can control nine till three, you can try and get those messages across, but if you’re*

*being constantly undermined by a parent who then never cooks, buys in takeaways the whole time,*

*takes them to McDonalds, Pizza Hut, anything that’s easy, partly because they’re both working, perhaps they’re working shifts, they haven’t got the time, it’s quick, it’s easy, but it’s hyper-calorific and they don’t realise what they’re doing and sometimes it’s not their fault.”*

**Participant 18 (Chair of governors)**

An alternative view provided by a smaller number of participants typically from independent schools contradicted the majority perception, by arguing that strong school leadership in which health and well-being is valued can go some way to counteract some of the identified negative influences obtained from the home environment.

*“I think the real pillar of this is the school and what the school stands for. We will do sport, you can’t get out of that, you can’t get out of it, so if you’re on a bursary and you’re from the wrong side of town and next door you’ve got a family of obese people our kid will come in and they will play sport.”***Participant 14 (Headteacher)**

6.5.2 Wider food environment

Whilst the general consensus was that an imbalance in energy results in excessive weight gain, participants in the main discussed the intake element of the equation in substantially greater depth and length than that of expenditure.  Central to these discussions was the belief evidenced by the majority of headteachers and chairs of governors that dramatic changes had occurred in society related to how individuals and families access, purchase and consume food.  Of primary concern was the perception that society in the 21st century had become more fast-paced and pressured, with families and parents often having to manage competing demands on their time and resources.  This view was shared across all school stratas represented.

*“I think it’s just, it’s something to do with society, the way that everything is so accessible and sort of twenty four seven lifestyle…..so there’s a thing about living in a really fast moving world, isn’t there?”***Participant 1 (Headteacher)**

*“I do worry that some parents for whatever reason find it difficult to provide appropriate meal choices at breakfast and dinner and that’s often to with pressures of busy lives.”***Participant 5 (Headteacher)**

Comparisons were drawn by some participants between their own childhood experiences of food access, and consumption to the families of pupils attending their schools.  A key difference identified by most was a perceived reduction in parents’ ability or willingness to provide nutritionally balanced homemade food in the home compared to previous generations.  This was attributed to the increasing time pressures of modern day society and a decrease in parental knowledge and skills around cooking.

*“I think we’ve gone wrong somewhere, generations, a couple of generations ago, when parents., stopped learning to cook at school and things like that and parents just don’t understand anymore...or they do understand, but they’re doing what’s quickest and easiest cos they’re working all day.”***Participant 11 (Chair of governors)**

For most, these societal changes have resulted in an escalating demand and need amongst adolescents and their families for food and the wider food environment to become increasingly convenient and accessible.  The collective view was that a greater societal emphasis on convenience and accessibility, has over time negatively impacted upon the dietary habits of children, adolescents and adults. This was viewed therefore as significantly contributing to the problem of obesity.

*“And my sense is that on the calories in side, the pace that which life is lived and therefore the growth*

*and availability of convenience food means people will avail themselves of it.”*

**Participant 4 (Chair of governors)**

*“I think there’s an issue about parents feeling, when they’re out at work all day they’ll go to the supermarkets. There's now an excess of ready meals to buy, I don’t think parents are always aware what’s in those meals.”***Participant 8 (Headteacher)**

A minority of headteachers made reference to societal changes and how this had influenced their own dietary habits in relation to the preference or indeed necessity for convenience.

*“I think we live in a society that’s so fast paced that actually, and I’m guilty of this, I go home, last night I got home at half past eight, hadn’t eaten, what do I do, have a quick snack and go to bed. I know it’s not healthy, but what else can I do?”***Participant 14 (Headteacher)**

An additional social change within the wider food environment, which presented positive and negative implications for adolescent dietary habits and obesity prevalence, was the evolving purpose of food within society.  Reference was made to the approach by previous generations to *‘eat to live’,* which was deemed by some to be in stark contrast to the 21st century where people *‘live to eat’.*

*“For some people, they get things out of proportion and they’re no longer using fuel as a mechanism for living, but it starts to fulfil all sports of other needs.”*  **Participant 20 (Chair of governors)**

This difference in approach and attitude to food, was evidenced by discussions about people’s demand or desire for food and drink. It was believed that consumption in the 21st century had to be a continually enjoyable and pleasurable experience, not merely addressing nutritional needs.  Examples of this provided by participants included the use of food in socialising, rewarding behaviour and at times in managing emotional well-being.

*“Eating basically to help with stress levels, quite often you’ve got parents who might be stressed they pass that stress to their children, their children see that, I mean the obvious thing is chocolate, crisps, all the, those kinds of things.”***Participant 15 (Chair of governors)**

Whether enabling the changing societal demands or indeed driving them, a common perception existed that across the country, an overwhelming rise has occurred in the availability and visibility of food retailers and manufacturers.   Of specific concern to participants was the belief that there has been an escalating and worrying rise in the accessibility of junk, fast or convenience food. This related to food sold in shops or catering establishments within the areas local to their schools and across society more broadly.

*“It’s a disgrace that in the Asda next to where I was working there’s a McDonalds across the road, a KFC and something else, but actually in Asda as you walk into Asda on the left hand side there’s another McDonalds.  It doesn’t have a big seating area, but it has, like a, almost like a, it's like a, takeout if you like, a takeout counter, so they’re going in to buy crap, they’re coming out with trolleys of crap and they get a McDonalds on the way out and I just, it’s getting people when they’re most vulnerable aren’t you.”***Participant 6 (Headteacher)**

The majority perception was that the increasing presence of fast food retailers surrounding an adolescent, i.e. within the community they lived, strongly and negatively influences the type and amount of food intake.  For many, excessive availability had exposed weaknesses in adolescents’ ability to make and sustain healthier choices. This was of concern, given the general belief that, as age increases, adolescents should have increasing responsibility for their own choices.

*“I went to the new Odeon in the city, the city has got a new six screen Odeon. My wife and I were utterly appalled at what was being offered to the children in terms of the popcorn, the bites and the massive buckets of Coke.  Young people were coming in and some of them children with trays of various you know high sugar drinks and snacks and that was at the cinema, they probably had something to eat beforehand and will probably have chips on the way home.”*

**Participant 18 (Chair of governors)**

However increasing accessibility was not a concern shared by all, with a smaller minority suggesting the importance of availability and choice across the wider food environment.  These participants supported the notion that the existence of fast food or convenience retailers was not necessarily a problem in itself, if people utilised a balanced approach to consumption.

*“I think everything is alright in moderation. I think a McDonalds is a nice treat every so often.”***Participant 11 (Chair of governors)**

Particular frustrations by some headteachers were aimed at the proximity and range of unhealthy food and drink products, for sale immediately near to their school.  An adolescents ease of access to local retailers or caterers selling items such as energy drinks or junk food, was viewed as undermining a school's ability to improve healthy eating behaviours within their setting.

*“The local sweet shop selling crisps and chocolate and all that kind of stuff, which however much you try as a school you can try and deal with, there are plenty of other providers, people who will park a fish and van shop outside a school.”*  **Participant 3 (Chair of governors)**

Supporting the proposed connection between school proximity to fast or junk food retailers and adolescent dietary habits, two headteachers suggested their rural as opposed to urban geographical location reduced the impact of this issue for their school.

*“We’re lucky in one way here because there aren’t a lot of fast food outlets and so the students are often bused in so they, their diet is well controlled and so we know that within the town there are one or two students who will go to the local Spa shop to buy drinks, sugary drinks. We’ve asked that shop not to sell them to those students.”*  **Participant 16 (Headteacher)**

Compounding the perceived problem of a societal wide increase in the availability and consumption of convenience foods, was the use of marketing in the wider food environment.  Some participants viewed adolescents’ dietary choices and preferences being shaped and influenced by the advertising and promotions utilised by food companies.  The general perception was that both media advertising and in-store promotions were disproportionately focused on unhealthier food and drink products.  This for some, assisted in a perpetuating cycle of demand for junk and fast food not only by adolescents, but children and adults.

*“So a kid goes into a shop and buys a bag of crisps or nine bags of crisps cos you know you do have kids who arrive at school who’ve spent, “oh they’re on special offer down the road”, and they walk in.”***Participant 6 (Headteacher)**

Despite these concerns, some proposed the positive albeit potentially limited role of celebrities in advertising healthier food products, and in the promotion of healthier choices to children and adolescents.  Most notably was the frequent reference made again to Jamie Oliver and his role in improving healthier food and increasing cooking in schools and families alike.

*“There are different standards that have come in since Jamie Oliver., And I think he has had quite a big impact to be fair, I think he has had an impact on how schools, it definitely makes schools think about what they give kids now.”***Participant 21** **(Headteacher)**

A universal feature of most discussions was the impact of food cost throughout the wider food environment and how this influenced the decision making of food purchases by adolescents and their families.  A discord existed for many, in relation to the variation in pricing between convenience and non-convenience food, with the former being perceived as typically cheaper and more affordable.  Consequently both headteachers and chairs of governors evidenced the belief that eating a healthier and indeed more nutritious diet was more expensive.

*“And the other issue is that convenience food’s so cheap and that fruit and vegetables are so expensive, I know that myself, so it’s cheaper to eat unhealthy, so it’s that’s another issue in itself...you can buy a packet of four croissants, big giant chocolate croissants for 50p, at the corner shop and that’s what they’ll have for their packed lunch because it’s cheap or like they’ll buy a packet of Greggs sausage rolls, five pack for whatever”.***Participant 11** **(Chair of governors)**

One headteacher expressed a different opinion to the majority view.  He proposed that alternative factors such as a lack of awareness or education about unhealthy foods, negatively affects the dietary habits of particular adolescents and families within the school’s local community.

Many participants revealed strong criticism at certain fast food companies who were deemed to prioritise profits and margins over people’s health and well-being.  Selling vast quantities of typically poor quality, non-nutritious convenience foods at a low cost.

*“We’ve been led astray by, by, from companies wanting to profit from sugar and not care about the consequence”.***Participant 12 (Chair of governors)**

Overall, despite the vast majority of participants proposing a negative reciprocal relationship between aspects of the wider food environment (i.e. societal changes, food accessibility, marketing and cost), and the impact on adolescent dietary habits and obesity, a small minority refuted the inevitability of this link.

Representing a state funded school (although previously independent) and an independent school, two participants discussed the potential role and ability of a family and school culture in counteracting the various detrimental influences from the wider food environment.

*“If the family values and attitudes and lifestyle clearly exclude the baddy, multinationals then they’re not a threat to them, if the family values quite happy with eating that kind of foods, these companies will take advantage of it. I know the corn syrup that’s used is outrageous, but I would suspect you would find very few families here that would touch it with a barge pole.”*

**Participant 17 (Headteacher)**

6.5.3 Deprivation

Further compounding the negatives influences associated with some adolescent home and wider food environments was the impact of deprivation.  Headteachers and chairs of governors regardless of the stratas they represented, frequently evidenced the opinion that significant inequalities exist in society relating to the distribution of wealth.  In the main the terms social class and middle and lower class were used to distinguish key societal differences in wealth they felt existed.  As a result of the perceived inequality and differences in social class, many participants from both state funded and independent schools referred to the existence of deprivation across society.  For those representing schools with higher free school meal percentages, significant concerns were expressed about the substantial prevalence of disadvantage in the communities their school serves. Across the board and within each strata, participants identified a relationship between increasing deprivation and poorer outcomes for health and well-being.

“*I think there is a stat that if you’re born East of a particular street in the city your life expectancy (is) eight and a half years shorter than if you’re born west of it. That's astonishing….At heart there is a social issue, if you go to poorer areas I suspect that the stats would say there’s more obesity. Well that’s the root cause.”***Participant 14 (Headteacher)**

This relationship was again proposed in relation to obesity and lifestyle behaviours.  As detailed across theme 1, both headteachers and chairs of governors identified that obesity and unhealthy dietary habits, were disproportionately evident in adolescents and families from more deprived communities.  Participants reflected on how deprivation within the home environment or community compounds or indeed causes the issue of excess weight and unhealthier lifestyle behaviours.

In offering explanations for this link, the role of poverty was proposed by participants especially in state-funded schools with higher free school meal percentages.  Poverty and low incomes more broadly were seen as a driver influencing the type and amount of food consumption by adolescents and their families.  Given that participants identified junk, fast and convenience food is typically cheaper, for adolescents and their parents with limited budgets choosing these options was deemed at times to be out of financial necessity.

*“There will be children who can’t eat healthily at home, who are filling up on cheap food because that’s all they can afford.”***Participant 2 (Chair of governors)**

*“Poverty of course that’s the other thing, that would fix it.  If you actually, if you resolve poverty people won't feel like the fast food option is the only way they can get a decent meal or fill their kids up, I’m not saying that is the only way, but that’s what they think.  That would help.”*

**Participant 9 (Headteacher)**

For those pupils and their families experiencing poverty in the communities surrounding a participant's school, not only did having a low income influence the overconsumption of unhealthy foods, it was also seen to restrict the ability to access nutritious foods important for health.  Examples given to support this argument included the higher cost of fruit and vegetables in comparison to processed foods.

*“So you might pay a pound for a bag of oranges and a pound for Happy Shopper custard creams, but there’s a reliability about the custard creams that there isn’t about the bag of oranges. Half of them might be bad and then what do you do when you don’t have very much more money.”*

**Participant 20 (Chair of governors)**

Some identified therefore, that despite adolescents and their parents from areas of deprivation being more at risk of obesity, they were also more at risk of malnourishment.  This was attributed to the disproportionate and excessive consumption of cheap yet energy dense food that provided little if any nutritional value.

*“I was also surprised at how small the school felt in terms of the students, in terms of their physicality.  I do think that some of our kids are malnourished, but then next door I’ve got a selection of bottles of nuclear fuel through to you know, red bull, blah blah, all the cheap versions sticky crap.”***Participant 6 (Headteacher)**

In addition to the variations in wealth and resultant effect on dietary habits, poverty at a home and community level was deemed to influence adolescents’ access to health enhancing opportunities.  Stark differences were reported in whether, what and how adolescents from working or middle class backgrounds participated in activities within their community that could influence weight status.  Headteachers in particular identified that middle class adolescents were more likely to access extra-curricular activities and attend paid for and organised physical activity opportunities.

*“And not doing enough activities, which the type of activities obviously more middle class families will have, will be structured, they’ll be run by specialists...whereas a lot of these students their activities will just be hanging around, the chip shop very regularly [laughs], they’ll enjoy that, they’ll have a nice time, but it’s not going to help them manage their weight.”***Participant 22 (Headteacher)**

One chair of governors drew comparisons and similarities between the differences in social classes, community environments and lifestyle behaviour in the United Kingdom and in America.

*“I think you see it more acutely in the States, where you go to a middle class area and there is nobody overweight and they’re all frantically going to gyms and having their kids on healthy foods and won’t let them touch anything and you go to another neighbourhood and it’s stark, the contrast, the obesity, the takeaway, the food.”* **Participant 17 (Headteacher)**

A minority of chairs of governors and headteachers questioned the majority view about the link between deprivation and financial hardship.  These participants proposed that generations of families have been able to live comfortably on welfare benefits from the government. Consequently unhealthier diets in deprived communities were argued to be more of an issue of values, priorities and a disproportionate lack of education.

*“I’m not sure it’s a financial thing you see, I think it’s just an education thing you know, I’m not sure healthy food is particularly more expensive than unhealthy food I just think there’s a lack of awareness about what’s bad and what’s good. And in deprived areas that seems to be worse whether, why I don’t know.”*  **Participant 21 (Headteacher)**

Whilst for most, a lack of income, resources and access in deprived communities posed the most generated inequalities in obesity prevalence, additional complex influences related to deprivation complicated this picture.  For those participants from schools with the highest free school meal percentages, substantial concerns were raised about the level of aspirations within their school’s local communities.  Similarly to the distribution of wealth, adolescents’ aspirations regarding education, employment and health were reported to not be evenly distributed across society.  Lower aspirations were typically associated with working class pupils or those who lived in communities where deprivation and poverty were highly prevalent.

“*I think, in the city, if your parents are unemployed, education has failed them, they don’t value it, why would you come out of that household and think “oh I need to go to school, I need to do really well”. And I think that, I think that’s a really difficult battle to confront.”***Participant 14 (Headteacher)**

The combination of poverty, low aspirations and a perceived lack of prospects in certain areas of deprivation, were viewed as a confounding negative factor not only for adolescent obesity, but more broadly in relation to lifestyle behaviours.

*“A lot of things, as in, “I can’t afford to buy a house, can’t afford to have a car, got no money”, you know, “not taking my pleasures away from me, I don’t have many pleasures, so you’re not going to have that”. I’ve heard that said by people, I’ve said that as an argument for why I’m smoking or why I’m drinking or whatever else.”*  **Participant 19 (Headteacher)**

Some participants reflected on the relationship between social norms and aspirations for health and well-being both at a family and community level.  It was suggested that in areas of higher deprivation, adolescents grow up with the expectation that adopting particular lifestyle behaviours including unhealthy eating, physical inactivity, is the norm for their family and their community.

*“That is what is expected and for some of our communities here where lots of our families don’t have high aspirations for their children, when they leave the academy they might go to college. They don’t expect them to want to do the exercise when they leave, they don’t want them to take part in different activities.”***Participant 22** **(Headteacher)**

In addition to the issue of aspiration, was the concept that some adolescents and their families from deprived communities have parochial attitudes.  This was evidenced in relation to a lack of willingness or indeed desire to travel out of an adolescent's own community, to access sporting facilities or opportunities more widely.

*“So we try and get the kids out of school, we use public transport, so there’s not kid here that can go “well I would go swimming, but I don’t know how to get there”, well it’s that bus at that stop cos we all go together and we take them, we physically break that barrier.”*  **Participant 6 (Headteacher)**

Throughout discussions regarding the influence of deprivation on adolescent obesity and lifestyle behaviours, participants from state schools, reflected on the impact and implications of community poverty and low aspirations on their school.  In the main, deprivation was deemed to present significant challenges in not only their ability to improve adolescent lifestyle behaviours, but much more widely in terms of educational and developmental outcomes.  For those schools with higher free school meal percentages, the additional difficulties and complexities of meeting the government's academic standards in areas of high deprivation meant that issues like obesity or dietary habits couldn’t be a priority focus.

*“I mean maybe, at you know, in the west end of the city, where all your kids were brought up and were taught to read at three weeks old and that kind of stuff, its more straight forward, you can have those fringe discussions.”*  **Participant 3 (Chair of governors)**

Headteachers and chairs of governors made reference to the allocation of pupil premium funding by government to support their school in reducing the academic achievement gap associated with deprivation and social disadvantage.  Some discussed how they used this funding towards action that contributes to obesity and the improvement of adolescent health and well-being generally.  Examples included breakfast clubs, physical activity opportunities, counselling services, additional school nursing services.  In the main however, frustration was expressed at the government's expectation, that pupil premium funding could overcome or counteract the overwhelming health and social issues connected with deprivation.

*“In our school it’s something like sixty five percent of the children are eligible, so it’s one of the biggest in England.  The idea that £1000 a year could somehow counterbalance a generation of conditioning and poverty and you know, to me was laughable.”***Participant 4 (Chair of governors)**

A minority went against this viewpoint, arguing that regardless of where you are born, a school can be a powerful and influential driver for raising educational and health aspirations.  Some felt passionate about inspiring adolescents and families to move away from the fatalistic attitude that it is impossible to get out of the vicious and generational cycle of poor education, health and employment outcomes.

*“And they’re just born, they happen to be born in that area and we have to allow them to see a world away from there and outside of that and it sounds very idealistic and it sounds very I don’t know what the right word is, like a dream almost, but it’s not you’ve got to give them those opportunities and see that they have the chance to do that.”***Participant 6 (Headteacher)**

This second theme has presented a detailed account of the connection participants made between adolescent excess weight and related lifestyle behaviours and the influence of place.  Whether caused by or associated with, participants identified predominantly negative factors within the home, wider food or community environment, which influences an adolescent's lifestyle behaviours and resultant weight status.  In the main these were seen by most as affecting a school’s ability to address adolescent health and well-being and ensure equality in academic progress across their pupil population.

**6.6 Shared responsibility, collective solutions**

This third theme builds on the first and second, by exploring participants’ perspectives of responsibility, behaviour change and partnerships in relation to preventing excess weight in adolescence and addressing the associated negative influences of place.

6.6.1 Continuum of responsibility

Despite the variation in perceived prevalence of excess weight in secondary school settings, obesity within society was collectively acknowledged to be an apparent and escalating public health issue.  Furthermore, given the identified increase in unhealthy lifestyle behaviours of secondary school pupils, most revealed concern about the long term risks of those adolescents experiencing obesity, poor health outcomes and lower life expectancy during adulthood.

*“So on the physical side, if a child is overweight to obese, the potential issues are type two diabetes, too much blood sugar, heart disease in later life, I mean I guess most of these problems won’t be felt, they’ll kick in later on, but diabetes, heart disease possible musculoskeletal strain in extreme cases.”***Participant 4 (Headteacher)**

This concern was directed not only at the significant health burden for individuals themselves, but much wider for society as a whole.  The most prominent example of this concern, related to the perceived costs of obesity associated diseases.  Participants relayed the fact that increasing resources required to treat conditions such as type two diabetes, presents substantial financial implications for the National Health Service.

*“I know that obesity’s been described as a ticking bomb and probably that’s a very very good label for*

*it. We talked early on just about the financial cost to services, that in itself means we have to take it seriously”.***Participant 15 (Chair of governors)**

The shared consensus about the severity of obesity for individuals and society, meant headteachers and chairs of governors universally supported the notion that obesity is an issue that requires addressing.  This was especially evident in regards to establishing the effective prevention of obesity in childhood and adolescence.  The complication for most, was in discussions about who had responsibility across society for this task.  Consequently, substantial variation existed both within participants own views and in comparison to others, about the concept of responsibility and obesity prevention.  A universal belief however, was that given the complexity of obesity causation, no single individual, organisation or stakeholder was responsible for its prevention.

*“Everybody’s, everybody’s responsibility. It is the responsibility of government, manufacturers, parents, schools, community groups, anyone who is having a conversation…it cannot be one person’s responsibility.”*  **Participant 18** **(Chair of governors)**

Despite this view, many identified that there is a resistance across society to take collective responsibility for both the problem of obesity, and the required solutions for preventing it.  A minority discussed the increasing fractions within society that make a collective approach more challenging.  Furthermore, reference was made to a current political emphasis on personal responsibility, which whilst viewed as extremely important by all participants, was deemed to be overly simplistic given the complexity of the issue.

*“People are a little bit wary of tackling it and it sort of spreads and you can see why because the you know it goes against the type of society that we’re creating, which is you take responsibility for yourself.”***Participant 16 (Headteacher)**

In spite of this, participants continued to argue for collective responsibility, with key stakeholders central to this concept perceived to have specific responsibilities for or towards obesity prevention, most notably parents, adolescents, schools, corporations and the government.

*Parents*

The overwhelming majority of headteachers and chairs of governors from across the stratas, identified first and foremost that parents have the primary responsibility for their child’s educational, health, social and developmental needs.  This included the prevention of obesity during childhood and adolescence and the adoption of healthy lifestyle behaviours.

“*It’s primarily the parents [laughs], it must always be primarily the parents.”*

**Participant 2 (Chair of governors)**

*“Parents have a big role to play, if you’re a parent you are responsible for your child.”*

**Participant 11(Chair of governors)**

Participants utilised words such as duty and obligation when referring to the parental responsibilities associated with preventing adolescent obesity.  Perceived parental responsibilities typically centred on the importance of educating children about the importance of healthy lifestyles, and providing a home environment where opportunities for forming healthy dietary and physical activity habits, are available and promoted.

*“Well, clearly the parents have a moral obligation to bring up their children in a way that gives them the best chance in life.  So a parent who, you know, say just eat anything, just shove it down, keep you quiet, all that I mean you know, that, someone who behaves like that in mind is not fulfilling their parental responsibilities.”*  **Participant 4 (Chair of governors)**

For a minority of participants, a belief existed that some parents were not deemed to be fulfilling their parental responsibility. This related to childrens’ health and well-being and more broadly in terms of behaviour and education.  As discussed in theme 2, this was viewed to be indicative of a wider problem in society, where personal responsibility has reduced.  Consequently it was perceived that a demand and resultant need for social responsibility has increased.

“The parents have in some senses abdicated their responsibility.  I think we are a society that thinks somebody else should do it, the number of times you here “the government should do it, they should sort me out”, and I think we end up in a society where, and I think this is from children upwards we don’t want to take personal responsibility, we don’t want to take the blame so if we can blame it on somebody else, you know, McDonalds is there it’s too easy and it’s cheap therefore it’s their fault.”  **Participant 7 (Headteacher)**

Despite these views and the wider consensus that parents have a responsibility to ensure their child remains a healthy weight, some participants applied a caveat to this belief.  As previously identified, participants proposed that a lack of parental education, awareness or skills, and the complex multifactorial influences from the wider environment, meant that it is challenging for some parents to fulfil their proposed responsibilities.

*“I mean in ideal world it should be a parental responsibility, but you know, you are talking about parents have the wherewithal, in terms of understanding, knowledge and so on and so forth or the point that I made earlier, even if they do, if you’re in extreme poverty you might know what you should be doing, but you actually can’t afford for that to happen.”*  **Participant 20 (Chair of governors)**

*Adolescents*

In addition to parental responsibility, participants extensively discussed the personal responsibility of adolescents for making their own lifestyle decisions. Most participants identified that in comparison to children at primary school age, pupils within their schools especially those in teenage years have the ability and desire to make their own lifestyle choices.  Subsequently adolescents were deemed to have increasing personal responsibility for their own health and well-being.

*“I think they do increasingly.  I think for an eleven or twelve year old more responsibility rests with the parents by the time they reach eighteen then yes they would have to take a, a considerable responsibility for their own dietary choices.”***Participant 5 (Headteacher)**

Some participants provided examples of where their school had adopted different policies or rules for different age groups related to food access, in recognition of increasing responsibility, autonomy and independence in adolescence.

*“I think we probably could provide the same sort of service in school and, but it’s not the point is it when you’re in year ten and eleven and you're allowed out of school at lunch you gonna go out of school at lunch let’s not deny it, it’s almost like a right of passage.”*  **Participant 6 (Headteacher)**

Providing opportunities both in the home and at school to encourage greater personal responsibility around lifestyle choices, was viewed as important for supporting an adolescent's maturation.  However it was deemed by some as a necessity given an adolescent's increasing resistance to authority and the greater influence of peers on choices and decisions.

*“We, we can recommend strongly that you know, and we do, about what should be in a packed lunch, but they’re teenagers and it’s more difficult to prescribe that.”*  **Participant 8 (Headteacher)**

*“It’s a funny age when you’re at secondary school because you’re influenced by your friends and it matters so much what people think about and what you look like and you want to fit don’t you.”***Participant 11(Chair of governors)**

*Schools*

Whereas opinions regarding parental and adolescent responsibilities achieved a greater consensus, views were divided regarding what, if any responsibility a school has towards the prevention of obesity and improvement of lifestyle behaviours.  In comparison to parental responsibility, almost universally participants agreed with the view that schools ought to bear only part of the responsibility for adolescent obesity prevention, and not all of it, as this participant succinctly notes:

*“So we have the major contact so I’d expect us to have that responsibility as well or responsibility towards, not responsibility for obesity.”*  **Participant 19 (Headteacher)**

Recognition was given to the fact that adolescents spend a large proportion of their time in a secondary school. Consequently most proposed that a school ‘in loco parentis’ has a responsibility to positively influence adolescent’s lifestyle choices and resultant weight status within their setting.  Despite this, most felt having responsibility for obesity outside of the school setting, would be disproportionate to the amount of control or power a school has over the wider influences in an adolescent's life, i.e. the home environment, wider food environment, deprivation.

*“People want you to take ownership of it for them and solve the problem for them, but actually you know, we can’t as a school, we can’t take away what is effectively a parental responsibility. The children are in loco parentis while they’re here, we do our best to act in loco parentis while they’re here, but if we, if parents get a message at home that they don’t want to buy into, that can cause conflict, and then tension and that tension comes back into school.”*

**Participant 18 (Chair of governors)**

Despite this, most felt that their school has two main responsibilities towards the prevention of adolescent obesity.  Firstly, participants proposed the belief that a school has a responsibility to educate its pupils, both in relation to the formal curriculum, but more broadly in terms of wider health and social issues.  In relation to obesity, this centred on a school providing formal education to raise awareness about the risks associated with unhealthy lifestyle choices, i.e. through physical education, food technology, PSHE.

*“Well I think it, when you look at the amount of time in the life of a child, from the time they come into secondary school from the time they go, they spend quite high, heavy percentage, so I think it’s incumbent upon the school to educate children, not just educationally, not just morally, but also health wise and I think that they should be educating young people in what’s good for them, what’s not good for them.”*  **Participant 15 (Chair of governors)**

As identified previously, emphasis was placed on the importance of increased personal responsibility during adolescence.  Consequently a schools educative responsibility for raising awareness was also focused on supporting adolescents to make informed lifestyle choices, as they transition into adulthood.

*“One of the main jobs of the secondary teacher is to help children begin to take personal responsibility*

*for all aspects of life and to help them grow from children who are completely dependent on parents for all decisions to adults who are basically responsible for all their own decisions.”*

**Participant 7 (Headteacher)**

Secondly most participants felt the school and indeed its respective headteacher, have a responsibility for ensuring the school setting is an environment, which promotes and enables the adoption of healthy lifestyle behaviours.  This was most frequently discussed in relation to a school’s catering provision and physical activity facilities.

*“The school acts in loco parentis, so they have a responsibility when the child is within the confines of the school, to make sure that they’re eating reasonably and moderately.  I mean a school that had fizzy drinks dispensers and chocolate bar dispensers on every corridor to keep kids would to happy to my mind would not be fulfilling their full obligation.”***Participant 4 (Chair of governors)**

*Corporate responsibility*

As detailed in theme 2, a clear frustration for many participants was the influence and more often negative influence of the wider food environment on both children, adolescent and adult dietary habits.  Consequently within discussions around responsibility, some participants deemed corporations that produce, manufacture and sell food products have a duty of care for the populations’ health.  This was in relation to the nutritional content and value of food, but also the advertising undertaken to promote the products.

“*I think that that is the other element of this, it’s immoral what certain organisations have done with our diets and ok, you, we might argue that we all have a responsibility for what we put in our bodies, but I think it’s all too easy to go to even Starbucks or wherever and have a very very sweet drink and not know and not be alert to what actually is in it.”***Participant 14 (Headteacher)**

Some described the harm they deemed unhealthy foods to have on adolescents’ health. Comparisons were made with other corporations or businesses and the obligations they are expected to meet around societal health and well-being.

*“Well they have a responsibility in terms of what people are allowed to produce and sell.  They must be some, I mean, you can’t sell a motor car that’s going to have its wheels fall off can you, so why should you be able to sell a drink that’s going to kill a child with diabetes, you know it’s the same concept to me.”*  **Participant 2 (Chair of governors)**

Both headteachers and chairs of governors referred to the responsibility they believe food manufacturers and retailers have, to ensure appropriate public information is provided regarding the content of food and drinks products.  Whilst, examples were given of corporations undertaking responsible labelling and marketing, some participants felt this doesn’t go far enough and that a greater responsibility lies with food production.

*“Dolmio’s haven’t said “we’re going to make Dolmio’s sauces from now on with less sugar”, they’ve said “only eat our sauces once a week”, that’s not the appropriate response. The appropriate response is, “no we will manufacture Dolmio sauces now with only you know, five spoons of sugar instead of twenty five” or whatever it is. It’s, it’s piecemeal, you’re paying, piecemeal approach to a massive problem.”***Participant 18 (Chair of governors)**

The concept of morality was referenced in relation to the responsibility of food manufacturers and retailers.  Both chairs of governors and headteacher proposed that it is challenging to balance the perceived moral responsibility corporations have, to not cause ill-health or harm in society, with an organisational necessity to make profits.

*“How do you change the behaviours of supermarkets? And you know, is there a moral dimension to our debate here, because it surely, it’s got to be more than just selling the product, but unfortunately making a profit doesn’t always sit well with making really good food.”*  **Participant 8 (Headteacher)**

Furthermore, discussions around power, influence and corporate responsibility for preventing adolescent obesity and improving lifestyle behaviours led some participants, both headteachers and chairs of governors to discuss their political views.

*“I mean, I have, because politically I’m a socialist, I have serious serious concern about the power multinational companies have anyway. I would regard companies like Coca-Cola as such, they have tremendous sway, tremendous amounts of money that they use to basically buy governments for their own ends, but that’s moving away from.”***Participant 15 (Chair of governors)**

A minority explored whether and how corporations could or indeed should, as part of its moral responsibility, utilise profits for wider community or societal benefit.

*“So I think they’ve got a moral responsibility as corporations and what are they putting back into the education I suppose from their profits, I don’t know. I don’t know how much Coca-Cola puts back into you know education on you know healthy eating for example, whether they do I don’t.”*

**Participant 21 (Headteacher)**

*Government*

A contentious issue, although commonly discussed in regards to responsibility amongst participants was the role of government or state.  Despite the arguments strongly advocating the importance of personal responsibility, many deemed that the complexity of the problem and its resultant burden, means government has a clear responsibility and role in its prevention and resolution.

*“So generally, I’m not a, I’m not a someone who thinks the government should intervene, but I mean I guess we’ve been, we are where we are because no one intervening, so you know, as individuals, as a society of individuals we’ve sort of allowed this to happen.”***Participant 12 (Chair of governors)**

Most participants who advocated for or promoted government responsibility in prevention, discussed the importance of the state’s role in; setting a strategic direction, creating national guidance, providing education and health services, utilising regulation and taxation measures and raising public awareness.  Comparisons were made to other public health issues such as smoking, sexual health or mental health.

*“I think government has a duty, in the same way it has a duty to intervene in terms of smoking or something.”***Participant 5 (Headteacher)**

 Whilst some discussed the merits of each approach as an aid for changing behaviour within society (see 6.6.2), some relayed concerns that an overemphasis on government responsibilities for prevention would detract from the importance of personal responsibility.

*“The state [pause], in my view has an obligation to provide as much information as it can to people about the consequences of their actions, but I would, I’m not, I don’t typically think that it’s the government fault or the government’s responsibility to stop childhood obesity.  I mean it has a social responsibility to put the information out there and to stand ready to catch people if they fall through the net and protect them, but you know, there are limits on what the state should feel it’s responsible for.”***Participant 4 (Chair of governors)**

Others expressed particular worries about the intrusiveness of government responsibility or increasing responsibility, as a means to prevent obesity at a social or society level.  Some utilising the phrases ‘big brother’ and ‘nanny state’ to highlight concerns about the level of involvement government should have in peoples’ lives.

*“Some people just aren’t bothered and I actually I think more people hide behind “it’s a nanny state, they’re not going to tell me what to do.”*  **Participant 19 (Headteacher)**

*“It starts to become my personal, political view if we’re not careful. I think there’s a, I worry the government will get too involved in trying to change behaviours.”*  **Participant 21 (Headteacher)**

A few participants made reference to the effect of politics on whether and how a government acknowledges or acts out responsibilities for issues such as obesity.  Some proposed that the relatively short periods of time a government holds power for, and the political desire to take action that is popular with the electorate, means the perceived responsibilities of the state are not always fulfilled.

*“Well they’re responsibility, I mean it, they’ve got to get votes and I think part of the problem with politicians is that every decision they are making is very very short term, it’s all about five years time, winning the next election and actually we are sleepwalking into disaster on so many different things.”***Participant 14 (Headteacher)**

6.6.2 Approaches to behaviour change

Participants referred to and promoted a diverse range of approaches, deemed to be effective in preventing adolescent obesity and improving lifestyle behaviours, both inside and outside of a school setting.

First and foremost, a collective recognition amongst headteachers and chairs of governors existed, about the role and value of education in influencing adolescent lifestyle behaviours.  Many extensively discussed the importance of providing information and raising awareness about the risks associated with obesity and the benefits of improving lifestyle behaviours.  For most, it was perceived that by imparting this knowledge, adolescent behaviour would positively adjust in accordance with the information they received.

*“It’s just so many different things isn’t it. If I had to pick the main thing, it would be education in a, in a whole society sense not education through what I do, but making everybody aware of as much as we can.”*  **Participant 21 (Headteacher)**

A minority of participants typically chairs of governors, proposed the use of ‘shock tactics’ when educating adolescents about obesity. This was viewed as useful for scaring or alarming adolescents into changing behaviour.  This approach was also deemed by some to be useful within education for wider public health issues, i.e. smoking and sexual health.

*“It’s about education, it’s about understanding what it’s doing inside your body and understanding the impact it’s going to have later on and kids don’t really appreciate that, teenagers they don’t really care what’s going to happen when they’re in their fifties and sixties and seventies do they. So it’s finding a way, maybe it’s the shock factor, showing some horrible pictures of heart disease and things like that.”*  **Participant 11 (Chair of governors)**

Changing behaviour through education and information provision was predominantly viewed as an important and effective approach, given the perception of its use in schools and health services.  However, many identified value in having increased public health campaigns, delivered at a national level in order to develop greater awareness across society rather than simply in isolated settings.

*“I think we’re going to attack it nationally it needs to come at all levels in that golden triangle, the kids, the parents and the school, and there needs to be a concerted effort to provide information, guidance and also opportunity to do something about it.”***Participant 6 (Headteacher)**

No reference by any participant was made to existing national government awareness campaigns for obesity, improving dietary or physical activity habits.  Despite this, some provided examples of previous or existing national campaigns or projects for raising population awareness about wider public health and environmental issues.

*“Adverts.  TV talks to every household doesn’t it, there’s barely a household not talked to by a TV.  We*

*know not to overfill out kettles, we know to turn our lights off, we know to recycle cos of big recycling and energy saving campaigns, has there been a campaigns, that sticks in, all the ones about cigarettes and all your blackened lungs and your impotence.”***Participant 10(Headteacher)**

Consequently, many participants championed an increased use of the media by government and obesity associated health charities (e.g. diabetes UK) to cascade information and raise awareness. This approach was proposed as having a potentially positive impact on changing obesity related lifestyle behaviours in children, adolescents and adults.

*“I, I suppose government health campaigns aimed at parents would be quite effective and just saying you know, how do you care for your son or your daughter.  I think that would quite effective, just raising awareness of how many calories go into some of the ready meals, junk food and that’s, that’s important.”***Participant 5** **(Headteacher)**

For some, in addition to ensuring availability of public health information amongst adolescents, reference was made to the importance of repetition and the consistency of awareness raising. Furthermore, the effectiveness of raising awareness was argued to be dependent on the credibility of those individuals or organisations delivering the messages. For example, a few participants proposed how behaviour change in adolescence would be more likely, if parents, teachers, the health service and the government were all ‘singing from the same hymn sheet’ in their information regarding obesity.

*“Yeah and it, the repetition of it and it being consistent as it’s repeated, yeah , I think, I believe, I believe in information provision, in a way that people can grasp it, but I believe in repeating them, cos that, for me, that’s a lot about what leadership is about, it's having a consistent message, but people hearing it often and then they begin to think “oh yeah, I know, this is how we roll around here, because he keeps telling us.”*  **Participant 4 (Chair of governors)**

An alternative view to the majority was posed, with concerns being raised about an over saturation of information.  The age of the internet, the constant accessibility of the media and news, meant that adolescents and families were argued to be overwhelmed by the amount of often conflicting health information.

*“Information overload in the media and my son and daughter in law are on the laptop or iPhone all the time and so they think, “oh we shouldn’t be given sugar, oh we shouldn’t be giving her salt, oh we should.”*  **Participant 7 (Headteacher)**

Despite strong support for the role of education and information provision in influencing adolescent lifestyle behaviours, a few headteachers and chairs of governors highlighted reservations about its actual effectiveness as a single approach to behaviour change.  Some proposed that whilst in areas of society, i.e. more deprived communities, a lack of education and awareness remains, generally the knowledge about the risks of obesity and benefits of improving lifestyle behaviours already exists.

*“The statistics clearly show, I mean the advice is being given, people are being employed, I mean dietitians exist, nutritionists exists, schools are teaching about diet, teaching about healthy eating. There are programmes like I mentioned earlier in the primary schools, we still have the majority of people in this country who are by the accepted measurement overweight or worse.”*

**Participant 18 (Chair of governors)**

Furthermore, some highlighted limitations in the concept that merely increasing knowledge through the provision of education and information, automatically results in positive behaviour change.  Those participants identified that despite knowing the risks and benefits, individuals are still able and frequently do exercise their right to make personal choices.

*“Yeah, it comes down to choices doesn’t it? That can’s got more sugar in it than that can yeah I know that, but I’m still going to drink it because it’s my favourite, so I think people will still make those choices.”*  **Participant 19** **(Headteacher)**

In addition, given the perception by a few that adolescents live in the moment or indeed the short term, simply presenting education about the long term risks and benefits of health decisions was not viewed as an effective method to change behaviour in the immediate term.

*“We’ve just got to not to preach at them and say you know, “you’ll get diabetes, or you’ll end up without a liver”, or anything like that, “you’ll get lung cancer”, they can’t see that bit, it’s too far ahead, you know, they will take risks.”***Participant 1 (Headteacher)**

Given the identified limitations of education as a single intervention for behaviour change, many headteachers and chairs of governors proposed alternative combined approaches.  For some, a combining education with either provision and/or restriction of opportunities related to lifestyle behaviours, was proposed as an effective approach to preventing adolescent obesity.

Participants often referred to the provision of opportunities within schools and wider society as potentially enabling adolescents to make positive changes to their lifestyle behaviours.  Examples of beneficial opportunities included facilities for sport and physical activity, local programmes for cooking commissioned community healthy lifestyle services or projects.

*“The thing is it was all very active and activity was encouraged and there were facilities to do physical exercise and we have to get our heads around somehow the encouragement and provision of facilities for physical exercise.”***Participant 15 (Chair of governors)**

Despite some reference to the benefits of providing opportunities for enabling behaviour change, a greater proportion of discussions focused on restricting opportunities for adolescents to engage in unhealthy behaviours, typically poor dietary habits.  Within a school setting, restrictions typically centred around the utilisation of school food rules and policies to influence both the accessibility and demand of particular food types, i.e. energy or sugar sweetened fizzy beverages and snacks high in fat or sugar.  Participants’ opinions were divided about the effectiveness or indeed appropriateness of this approach for changing behaviour not only in adolescence, but more broadly across society.

*“I don’t think it’s about depriving people of things because if you deprive children of things they want it either more, it’s like adults you just want it even more, it’s about giving them healthy choices and then they need to understand why it's unhealthy.”***Participant 11 (Chair of governors)**

Outside of the school setting and in relation to the wider food environment, the use of legislation and taxation was extensively discussed by the majority of participants.  Frequent reference was made to the government's proposed sugar tax on the soft drinks industry, and whether or not its application would result in a change in individual and societal behaviour. The perceived effectiveness of utilising legislation and taxation based approaches to behaviour change was highly contested.  Some participants proposed that given the escalating prevalence of obesity in society and the multiple negative influences on individuals’ behaviour, tougher approaches are now required to prevent obesity.

*“I think that sugar tax is a great idea, you know, that, I think, there might have been something in the news saying used somewhere and it had led to a reduction in the amount of soft drinks consumed, but if you know what your main proponents that cause childhood obesity are and you can stem them, in various different ways same as you do with alcohol and smoking they’re exactly the same.  If we know that sugar are as harmful as those then you put the taxes up on them.”*

**Participant 10 (Headteacher)**

Furthermore, others felt that whilst the sugar tax was a positive step forward in taking firmer preventative action, the measures currently proposed by government do not go far enough to address the overwhelming accessibility and promotion of unhealthy foods.

*“I don’t think it’s going to work, I really don’t. Because a sugar tax, if you tax coke, people will say “oh* *ok the price has gone up, I’m going to carry on drinking it. You’ve got to ban or control, I’m not saying* *ban it completely because a certain amount of sugar is obviously good for you. But they do need to*

*control it.”***Participant 13 (Chair of governors)**

In stark contrast to those who promoted government led legislation and taxation as an effective approach to behaviour change, some expressed concerns about whether controlling or directing behaviour in this manner interferes with individuals democratic freedoms. This led to some proposing greater governmental interference creates a ‘nanny state’.

*“It goes back to this idea of the nanny state, I’m not one for saying we shouldn’t have a vending machine, with Coke and Pepsi and all the other things because we’ve got to trust the kids to make the right choices.”***Participant 14** **(Headteacher)**

In spite of these concerns, most participants recognised that utilising one single approach, i.e. education or legislation, would not be effective in shifting the increasing societal norm of excess weight.  Therefore some participants proposed the necessity to use an array of approaches in order to make a meaningful difference to prevention, whilst also retaining the balance of individual and social responsibility.

A key dimension to conversations around behaviour change was the concept of early intervention. Whether in relation to education or the provision and restriction of opportunities, a common perception was that prevention should start earlier than at secondary school age (i.e. adolescence).  Some made explicit reference to the role of maternity services, early years settings and primary schools in supporting parents and their children to adopt healthy habits early in life.

*“So from day one really, it’s about how to you approach the feeding of your baby and how soon do you wean that baby off milk onto supplements and onto you know liquid food and what’s the nature of that food. So from very early on there are very important choices to make and those choices that are made pre-school, first three years maybe, will already be having an influence before that child sets foot in nursery.”*  **Participant 18** **(Chair of governors)**

A few participants discussed the challenges for their school and wider society in trying to influence or improve adolescent lifestyle behaviours, when habits had already been formed in the years prior to them arriving into secondary education.

*“Really in order for it to work it shouldn’t be a problem secondary schools have to deal with because all the work should been done in the first ten years.”***Participant 9** **(Headteacher)**

Despite this, most participants proposed that behaviour change could occur in adolescence as a result of various approaches either within their school setting or across wider society.  Furthermore both headteachers and chairs of governors collectively supported their school’s role in this process (as detailed in theme 4).

*“I think we can change things I think it’s more difficult. I think they get into bad habits, or there’s a sort of lifestyle they’ve slipped into by the time they come to us, but I don’t think we can’t change that, I think we can. It’s easier if it’s been done earlier, but that’s all childhood development really I think.”***Participant 21** **(Headteacher)**

6.6.3 - The importance of partnerships

Throughout the interviews and resultant discussions, participants interchangeably referred to the importance of external partners. Whilst not deemed to have a key responsibility for obesity prevention, external partners were viewed to be instrumental in the effectiveness of preventing excess weight both inside and outside the school setting.

For most, the concept of building and maintaining multi-agency partnerships, especially across public sector organisations, was deemed to be of critical importance. This was in relation to both the prevention of obesity and the improvement of lifestyle behaviours across childhood and adolescence.

*“I think unless you get a concerted approach across a number of areas of activity, so health, social services, education, I think that concerted pressure can make more of a difference.”*

**Participant 20** **(Chair of governors)**

The most notable partner, who participants frequently referenced as central to public sector partnerships for obesity prevention, was the National Health Service (NHS).  Whilst no formal responsibility for prevention appeared to be attributed to the NHS, most participants referenced the vital role the organisation does and could have in the future.  Some headteachers from state funded schools provided examples of where partnership working with the NHS or associated organisations, had enabled the implementation of behaviour change interventions, with pupils and their families in school settings.

*“I’d worked with the local primary care trust to try and get at least if not leaflets, but a person with leaflets or something available, so that there was, when people came into school, one it helped me as it broke down a few barriers because they didn’t like going to school because most had had a bad experience.”***Participant 6** **(Headteacher)**

Both headteachers and chairs of governors discussed the benefits of their schools engaging with both the NHS and wider public sector organisations. Examples included school nursing services and public health programmes to support prevention in schools.  These perceived benefits centred on the ability for partners to address capacity issues within schools (discussed in theme 4) and enhance the credibility and consistency of health messages delivered.

*“Well it’s unless its, because of the capacity, it’s just capacity and maybe, maybe coming from someone else a professional, from public health or someone like that, from a health background rather than an academic background might have more impact, with the kids.”*

**Participant 11 (Chair of governors)**

Despite this, many headteachers and chairs of governors discussed their belief that partnerships across public sector organisations are currently disjointed and lacking connection, especially in relation to education and health.  This was perceived to present significant challenges for achieving a meaningful reduction in obesity prevalence across society.

*“There’s no real, there’s no joined up thinking between schools and other government bodies currently, if you look at again, probably the biggest, doctors are not close to schools anymore, school nurses, I’m not sure we’ve even got one anymore full time, local authorities and Public Health England have some duty for public health don’t they I know, so they never do anything.”*

**Participant 12** **(Chair of governors)**

Some referenced the view that whereas historically strong and effective relationships existed between the NHS, health services (i.e. school nurses) and schools, the current ability for those partnerships to be sustained is being hindered. This was attributed to disparate priorities and substantial funding pressures. Participants argued that this impacted on the ability for behaviour change interventions to be delivered in their school settings.

*“But it worries me, it gives me great anxiety when I see local authorities having to cut back, government cutting back in areas like health visitors, the kind of people who would historically go into school and talk to children about foods, what their weight was doing to them and that side has now been cut back along with other government cut backs.”*  **Participant 15 (Chair of governors)**

Furthermore for one headteacher, not only were financial constraints within NHS and health services affecting partnerships across public sector organisations, it also meant schools were being disproportionately expected to deliver against a wider health and well-being agenda.

*“It really pees me off how, I mean, everybody's short of money, but if anything gets put on to the NHS they immediately pass it on to schools.  It happened, as soon as they realised the power of email, when stuff like swine flu was kicking off, well it was really important that everybody washed their hands, they sent us an email of a poster saying “print these off and put them around your school”,”.***Participant 9 (Headteacher)**

Both headteachers and chairs of governors made reference to financial challenges in wider public sector organisations, outside of a health remit such as local authorities.  For some, this coupled with the increasing academisation of schools, was perceived to further impact on the ability to develop effective partnerships for preventing obesity and improving lifestyle behaviours in adolescence.

*“I still come back to the fact that I think it has to be multi-agency and at the moment that’s not happening because the resource isn’t there and how you would bring that about with increasing academisation in schools I don’t know.”***Participant 20 (Chair of governors)**

The view that an academy school has less access to support from wider partners around health and well-being than a community school, was disputed by one headteacher.

*“Yeah but you’d get that with a trust so I get exactly the same support pretty much probably better in some areas not as good in others from the trust than I got with the local authority.”*

**Participant 21 (Headteacher)**

Consequently, some called for greater capacity ‘within the system’, in order to be able to develop connected and sustainable public sector partnerships, which will have a meaningful impact on reducing population level obesity.

*“So money is a barrier in terms of us having, being able for us to provide something more holistic on a Monday to Friday.  A school nurse would be brilliant, a school nurse not even full time, but five days a week would be absolutely superb because they would be able to get their teeth into something.”***Participant 9** **(Headteacher)**

In contrast to the majority focus on public sector partnerships, a smaller minority discussed the potential advantages of forming relationships with private sector organisations.  Participants provided examples of working with private companies, either to deliver health and well-being information in schools or to provide a range of resources.

*“We do a PSHE programme and one of the units is in there is about self-image. It’s run by Dove, you know, Dove, in the cosmetic industry.”***Participant 16** **(Headteacher)**

One chair of governors proposed that whilst not currently in place, a potential reciprocal relationship could be established between schools and supermarket retailers, in order to deliver behaviour change interventions around healthy eating.

“*Maybe if a kind of a programme could target others and say “do you need some help in planning healthy menus for your family”, something I think your Aldi’s and Lidi’s and people like that could be involved with….They get a benefit out of it because if you come in and say “listen, a healthy menu for a week is da, da, da, da”, and many would “that will cost a fortune”, “not if you come to Aldi”,”.* **Participant 13 (Chair of governors)**

However, the concept of forming partnerships with private sector organisations to assist in preventing adolescent obesity wasn’t widely discussed or suggested. In some cases concerns were raised about the appropriateness of engaging the private sector due to their profit-making nature.

*“I mean they are profit making organisations whereas the National Health Service isn’t. I would much rather see the National Health Service in a position to be able to provide people to come in and talk to children and talk to schools.”***Participant 15 (Chair of governors)**

In addition to discussing partnerships with public and private sector organisations, participants referred to other individuals and groups within society, who were perceived to be able to support the obesity prevention agenda.  Firstly, celebrities and the influence of celebrity culture on children’s and adolescents lives was referenced.  Some headteachers and chairs of governors proposed, that collectively schools have and indeed could develop partnerships with celebrities like Jamie Oliver and David Beckham. This was argued on the basis of strengthening the credibility of behaviour change messages both within and outside of school settings.

*“I think the sort of, I use the word cultural, it’s so big isn’t it and the cultural shift that’s occurred I think of as result of the likes of Jamie Oliver is substantial, you know significant. His cooking in schools and really, this dead cool guy telling you “that it’s better to eat one thing or another”, does have an impact.”***Participant 17** **(Headteacher)**

 In addition to celebrities, participants referenced the existing and potential partnership role for charities, community groups and religious bodies, in supporting the delivery and consistency of messages amongst adolescents and their families.

*“We have a lot of family workers here, we have a lot of agencies that work with us out in the community with the families in terms of nutrition, in terms you know, trying to make an apple not an alien in this school.”***Participant 6 (Headteacher)**

In summary, this third theme has presented both shared and diverse perspectives on excess weight prevention, related to the concepts of responsibility, behaviour change and partnerships.  Broadly speaking preventing excess weight was seen as the responsibility of a variety of key stakeholders including secondary schools.  Furthermore, given the complexity of overweight and obesity, a range of approaches to behaviour change were proposed along with the requirement to develop effective multi-agency partnerships.

**6.7 The secondary school setting**

Throughout the third theme, when exploring participants perspectives on responsibility, behaviour change and partnerships, frequent and consistent reference was made to the roles of secondary schools.  Significant time during interviews was spent on discussing the internal activity and dynamics within a secondary school setting, related to the prevention of excess weight in adolescence.

6.7.1 Action contributing to obesity prevention

Given the belief that schools have a key responsibility and role in supporting behaviour change, participants talked extensively about action within their setting that was deemed to contribute to the agenda of obesity prevention.

Within the conducted interviews, a whole school or systematic approach to preventing excess weight gain in adolescence was not reported or discussed.  Furthermore, aside from one school, the majority of participants confirmed any school-based policies to improve adolescent lifestyle behaviours did not explicitly reference obesity and its prevention.  For most, this was attributed in the main to obesity not being a priority issue.

*“We talk about the unhealthy lifestyles choices some of our students make, but we don’t talk explicitly about obesity.”***Participant 21** **(Headteacher)**

*“Because?”* **Interviewer**

*“I just don’t think it’s on the agenda at the moment in that respect.”***Participant 21 (Headteacher)**

Despite this, all participants did refer to priorities and action their schools were currently undertaking, that could or indeed does contribute to the prevention of excess weight gain during adolescence.  Driving this action was an understanding of the connection between lifestyle behaviours and academic performance. In addition was a reported desire to improve adolescent's health and wellbeing given their school’s commitment to developing the ‘whole child’.

*“Yeah, it’s not about, I don’t want any fat children.  I just want healthy, well children.  Emotionally well children, resilient children.”***Participant 1 (Headteacher)**

Prioritising the ‘whole child’ was a concept frequently discussed by headteachers in particular, and referred to focusing on an adolescent's educational, physical, mental and social developmental needs. On a practical level, this included a school providing opportunities both inside and outside the formal curriculum, to develop and improve adolescent life skills, social relationships, character education and healthy lifestyle behaviours.

*“There is a willingness and desire as it’s all wrapped up in wanting the best outcome for that person isn’t it, every individual student, we want the best outcome for the child. So that’s not just teaching and learning we always say that, our ethos, it’s about that person being a well-rounded individual when they come out of school.”***Participant 11 (Chair of governors)**

In relation to their school’s contribution to adolescent obesity prevention, participants typically focused on action deriving from a secondary school performing two key functions.  Firstly, as an educator delivering and teaching health information and secondly, through the provision or restriction of opportunities related to lifestyle behaviours.

Regarding a school’s educative role, significant value was placed by both headteachers and chairs of governors on the use of the existing curriculum to deliver key messages around obesity, diet and physical activity.  Underpinned primarily by the belief that increasing knowledge and awareness can be an effective vehicle for behaviour change, participants referred to the use of academic lessons to embed key health information and messages (e.g. within food technology, biology, physical education and PSHE - physical social health education).

*“So long as everybody’s singing from the same hymn sheet, everybody is saying the same thing and all lessons are relevant lessons, are raising the issues like food technology, biology, any of those where you’ve got an opportunity to talk about healthy body, healthy lifestyle and things like that and obviously PE.”***Participant 2 (Chair of governors)**

*“So we have a job as educators to teach kids the rights and wrongs of healthy eating, healthy lifestyles, which we do through the curriculum like PSHE.”***Participant 10** **(Headteacher)**

A distinct advantage of embedding healthy lifestyle information in existing lessons, was for some the ability to overcome a lack of available time in the curriculum. The lack of time was attributed by all state-funded schools to the increasing government prioritisation on purely academic subjects and performance.  An additional benefit, highlighted by one headteacher, was that ‘smuggling’ health messages into compulsory examinable subjects rather than having a standalone lesson, meant students took the information more seriously.  For some however, limitations did exist in relying exclusively on formal health education.  For secondary school students particularly in the latter two school years, non-mandatory subjects like PSHE, food technology and physical education were often ‘dropped’ or not prioritised due to increasing academic pressures.  This results in adolescents not consistently accessing health education throughout their entire school experience.

*“When a student make their options at GCSE, if they don’t choose PE and they don’t choose food technology then the only other sort of curriculum area is PSHE, but by then you tend to have moved off those issues and have moved onto, those personal kind of issues and have moved onto more moral types of issues.”***Participant 16 (Headteacher)**

Aside from contributing to the prevention of obesity through education, participants reported extensive action around the provision or restriction of opportunities related to lifestyle behaviours.  For the majority this focused on their school’s approach to school catering and school sport.  Whereas a specific focus on obesity prevention didn’t exist for the vast majority, all participants did report that their secondary school had ‘policies’ or ‘rules’ governing the provision of their school catering.

*“Well it’s about catering, what catering you provide, it’s about not providing some catering, so you don’t have vending machines for example, yeah, that’s the first thing you don’t do, its restricting opportunities.”*  **Participant 3 (Chair of governors)**

Headteachers and chairs of governors in the main expressed their school’s commitment to meeting national food standards, and to increasing the uptake of school meals (especially for those adolescents on ‘free school meals’).

*“I think so because of the food standards have been in since 2008 now so we’re seeing children come through to secondary school that are used to not having chips everyday, that are used to choosing vegetables and fruit and salad and things like that.”***Participant 11** **(Chair of governors)**

*“We try and put on healthy stuff at school because we’ve got nearly half our kids free school meals, so therefore we try to create a balanced lunch for them because we sometimes know they might not get a nutritional sort of meal at the end of the day.”***Participant 21** **(Headteacher)**

This commitment was reported to be not without its challenges however.  Common difficulties in doing so for state funded schools, related to the significant complexities of delivering high quality food with reduced budgets.  For both state funded and independent schools, providing healthy balanced food acceptable to adolescent dietary preferences was presented in the main as problematic.  This was especially noted by those schools with a higher free school meal percentage.  This often produced noticeable tensions particularly for academy schools and their catering providers, who were frequently deemed to prioritise profits over adolescents’ health.

*“They sneaked on sausage sandwiches and I took them off because they looked revolting and I thought they were high fat… they wanted to put flapjacks on at breaktime, but I said no because I know it’s going to be treacle and sugar…..We do battle with the company cos theirs is about profit and ours is about healthy food.”***Participant 1** **(Headteacher)**

A further challenge centred on a perceived inadequacy of some school dining spaces to host a growing school population, and participants’ beliefs that adolescents disliked to queue for food and wanted lunch ‘on the go’. This combination often required catering to become more efficient, through the use of snack bars, typically selling quickly accessible and consumable pasta pots, sandwiches and ‘healthy pizza slices’.

*“A lot of secondary schools now are new builds and the dining facilities are tiny because they just, they put the space into teaching spaces quite rightly, but it just means that your dining space is compromised.”*  **Participant 11** **(Chair of governors)**

At times, innovation in catering was deemed a necessity to overcome the perceived preference by adolescents for unhealthier food.  ‘Health through stealth’ was adopted by some school caterers, where adolescents were accessing healthier options without the awareness of this occurring.

*“We’ve got a duty in terms of the provision in the canteen to be a healthy school, to make pizzas as we do, but with oats, oat flour, the kids don’t realise they’ve got, it’s not white flour it’s oat flour, so they get in their nutrition so they don’t realise when they buy the cans of fizzy pop it’s not sugar rich fizzy pop.”***Participant 10** **(Headteacher)**

In addition to the provision of opportunities to partake in healthier options, participants overwhelming reported having school rules restricting the on-site sale of items perceived as ‘unhealthy’.  This related to food provided or sold within breakfast clubs, school lunches and vending machines.  Examples of restricted products included fizzy drinks, sweets, crisps and chocolate.  Other items such as energy drinks were reported to be prohibited from being brought onto school premises.

*“So yes we can directly influence what we offer, we don’t have fizzy drinks, they’re banned, we don’t have high energy drinks, they’re banned, chips is only once a week, deep fried foods we don’t serve at all and we encourage the canteen to actually cook food so it tends to be cooked rather than in microwaveable packaging stuff.”*  **Participant 18 (Chair of governors)**

Despite these restrictions, participants highlighted their continuous frustration at adolescents purchasing unhealthy or banned items from nearby shops or fast food outlets, before school or during lunch times.  Participants by and large felt unable to address this, given the belief that a school couldn’t override the multiple influences on adolescent dietary preferences from the home, built and social environment.

*“We have got some children that do not have a healthier diet that choose to buy, go to the shops in the morning, we’ve got, we’re surrounded by supermarkets and they will fill their pockets with sweets and unhealthy snacks, which we don’t advocate having in school.”***Participant 8** **(Headteacher)**

For a minority of participants, restrictions on food provision or having a ‘locked gate’ policy so that adolescents aren’t able to go out of school during the day to purchase food, was inappropriate. It was suggested that such a restrictive approach, fails to recognise the importance of adolescents being able to make their own informed choices.

*“Do some of them bring in a snack at break time, yes they do, it would be draconian to stop that, so it’s, it would be trying to encourage, positive encouragement of healthy eating rather than say “you should not eat it”.***Participant 5 (Headteacher)**

Aside from school catering, headteachers and chairs of governors universally presented their school sport provision, as contributing to the prevention of excess weight gain in adolescence.  In addition, to their school’s mandatory delivery of physical education (two hours per week), participants positively referred to an extensive and diverse range of sporting facilities and extra-curricular activities offered within their setting.

*“It’s sort of little bit similar to Tai Chi, all the classes have that once a week at least and that requires physical coordination, concentration and all sorts of things like that.”***Participant 17 (Headteacher)**

*“The number of after school activities, we support very proactively in relation to making sure that Monday netball, football or whatever so we’ve got a huge range of activities.”*

**Participant 22** **(Headteacher)**

Having a high quality physical education department was seen as vital for creating an ‘inclusive’ offer for all students, in order to accommodate a variety of needs and tastes.  This typically centred on the provision of ‘non-traditional sports’, which would engage the ‘non-sporty kids’.

*“It’s having really good PE facilities, it’s having a really good PE department one that really switches*

*kids on that is inclusive, that has an inclusive programme.”***Participant 8 (Headteacher)**

*“So there’s a lot of sport on offer plus we’re looking to encourage, we want to get more dance in the curriculum so for kids who are not sporty, but they can get a bit of a glow and a bit of a sweat on.”***Participant 14** **(Headteacher)**

For some participants they acknowledged the crucial role their physical education department plays in supporting those adolescents already above a healthy weight.  Sport or physical activity participation was viewed to be more challenging for overweight or obesity adolescents, due to issues with body image and self-esteem.  Consequently, examples were given in particular by headteachers, of ‘tailored’ opportunities provided by the school to engage in physical activity.

*“Because you know, some of our more overweight children just during PE lesson will go for a walk with the TA and go out, you know, and go shopping with the TA for some fruit.”*

**Participant 1 (Headteacher)**

*“There’s another girl who doesn’t do, who will do anything to avoid PE and she is clearly overweight so what they do with her is they go down to the gym and do some strengthening exercises.”*

**Participant 16** **(Headteacher)**

A small proportion of participants from state funded schools, did reflect on increasing pressures, which restricted their ability to provide opportunities for physical activity or sport in school.  Reductions in teachers’ capacity, increasing accountability for academic results and growing financial pressures meant for some, their school weren’t able to prioritise and promote sport and active recreation in the way they would like.  This was particularly relevant to the reductions in physical education participation by students preparing for or doing their GCSEs.

*“Well, physical activity has got to be a big thing. I don’t think schools do enough physical activity and I think that’s partly because the curriculum is so squeezed now and it’s trying to get PE into curriculum time and enough of it as well.”***Participant 11 (Chair of governors)**

As highlighted previously, this view was not shared by those within independent schools. They strongly championed their school’s commitment to providing opportunities and encouraging all students to participate in both physical education and extracurricular activities.

For a minority within the state sector, an additional frustration related to school sport centred on the perception that the government disproportionately focuses resources and funding on primary school sport.  It was therefore perceived by these participants, that secondary schools frequently ‘missed out’ on being able to comprehensively support adolescents to increase their uptake of physical activity.

*“George Osborne’s [the current chancellor of the exchequer] just said the sugar tax income is going to primary school sport so as a secondary school chair who knows not a lot about these things, actually, so actually “thanks George, I’m less important than a primary school”, so that’s great, so he told me that message is that I’m less key, well I’m thinking isn’t it all the same, why wouldn’t you spread it across?”***Participant 12 (Chair of governors)**

6.7.2 Competing priorities

For participants representing state funded schools a significant and unanimous frustration and tension was reported between schools and the government.  This was attributed to the perception of ‘competing priorities’.  A collective belief shared was that whilst the core purpose of a school is to educate, schools should not simply be ‘exam factories’, merely ‘churning out’ adolescents with the required academic qualifications.  Instead, participants referred to their school's and their own moral obligation as either headteacher or chair of governors to develop the ‘whole child’.

*“My moral purpose is that we should be educating the whole child and we should be looking at the those things that are going to affect their life and life expectancy, we’re preparing them for their life beyond school.”*  **Participant 19 (Headteacher)**

Participants deemed their school’s ability and desire to prioritise the whole child, including supporting adolescent health and well-being, was substantially hindered by a disproportionate governmental focus on academic achievement.  Escalating pressure on schools to monitor and improve educational outcomes, coupled with demanding inspection regimes predominantly focused on academic results, meant anything on the ‘fringe’ of a school’s core purpose was not able to prioritised.  This was reported as the most significant barrier to many participants from state funded schools, who in general expressed a strong willingness to positively influence adolescent lifestyle behaviours.

*“If you have a look, secondary schools have been forced to focus entirely on results and the results are dictated and clearly laid out. And when you start and try to deliver on those how the heck they manage to do any extracurricular activities I don’t know….Our priorities with a fat kid, get him through his GCSEs and you know, anything else is totally incidental.”***Participant 13 (Chair of governors)**

*“It’s like it’s not my job, everybody is telling me I’ve got to get GCSEs out of the kids, I can’t make them thin and get them GCSEs so I’m going to get them GCSEs.”***Participant 21** (**Chair of governors)**

For some an irony existed that despite the overwhelming national drive to improve academic results, there was still a government expectation that state funded schools should make a meaningful difference to the ‘whole child’.  Examples of which, included government ‘edicts’ or policies on pupil premium, cultural, religious and spiritual development, radicalisation (prevent strategy), healthy eating and school sport.  Meeting government expectations to deliver on such a wide range of priorities was felt by most to be unrealistic and impractical. This was given the necessity to divert the majority of a school's capacity, resources and budget to what schools are actually measured on and accountable for, i.e. improving pupil attainment.

*“Schools are very much being paired back in my view to an Ofsted schedule and passing exams and that’s fine if that’s what we want as a country our schools to be, but they can’t expect to have an accountability system one way and then expect schools to do healthy lifestyles, drugs, you know, improve how parents work, you know, everything else. We can only do what we can do you know and my accountability isn’t all that stuff really.”*  **Participant 21 (Headteacher)**

Participants reflected on the fact that despite a government expectation that schools should contribute to improving the lifestyle behaviours of adolescents, from recollection, Ofsted inspections did not assess resultant action or interventions i.e. school catering, physical activity provision, formal health education.  Significant variation in opinions were evident when discussing whether increased school accountability for reducing excess weight or improving adolescent lifestyle behaviours, would be of value.  Most felt targets and performance indicators on the issue would galvanise action, due to ‘what gets measured, gets done’, however others believed it would simply increase their workload.

*“I just think we’ve got enough to do [laughs], in terms of the academics and then it’s so easy to be overwhelmed.”***Participant 7 (Headteacher)**

***“****But I think, if the government said every school is going to have an obesity strategy and every school is not going to have soft drinks and Ofsted when they come along will ask you “what’s your eating strategy” and then they actually did it, then it would be rolled out the following week. The week after we thought Ofsted were going to ask us questions, we’d be doing it and really it would be that simple to change.”***Participant 12 (Chair of governors)**

One chair of governors felt however that an increasing government focus on issues like excess weight would detract from a school's core purpose to educate its pupils.

*“Excuse me for being old fashioned, but is primarily [laughs], should be primarily dedicated to the learning of young people and not the health issues…..I think I would be somewhat alarmed if a section five could put a school in a category because of the weight profile of the student population because I think it’s putting an emphasis on a school that’s inappropriate.”***Participant 20** **(Chair of governors)**

Compounding the problem of competing priorities between a school and government was the perception of reducing school budgets, across both primary and secondary state funded education.  For the majority of headteachers and chairs of governors from state funded schools, less resources and funding led to the necessity to cut back or stop activities, which do not directly contribute to the academic success of a secondary school.  Examples of which related to the quality and provision of sport activities and improvements to school catering.

*“If you don’t get enough money to fund that then you have to draw back and what you tend to draw back to is our teachers, as they’re very expensive, yeah, but that means you haven’t got the same resources to do some of the fringe activities like dealing with obesity, like like exercise, like all those other things, like catering, things you’d like to do.”*  **Participant 3 (Chair of governors)**

*“Why is that, I think that what the government has done is scandalous in terms of taking funding away, taking teachers away and that starts right at primary school. The fact that some primary schools will not have a PE trained, PE teacher is scandalous.”*  **Participant 14 (Headteacher)**

Despite the acknowledgement that competing priorities and financial pressures exist within the education system, some headteachers in particular felt resolute that their own values and the ethos, vision or culture of their school could enable the whole child to still be prioritised. This included the promotion of adolescent health and lifestyle behaviours.

*“Yeah, I think anything you’re going to be measured on and accountable for is going to be first and foremost in your priorities, but equally its again the ethos of the school, if you believe as we do that qualifications and character count….within that sphere healthy lifestyle, healthy choices can feature thus it is important for school you know, yes, things that you are accountable for are very important, but so are the soft, softer values, you know, the things that can influence children’s self-esteem and life choices.”***Participant 10** **(Headteacher)**

Headteachers of independent schools in particular, placed significant emphasis and value in creating a whole school culture that promotes health and well-being.  They perceived the ability to do this was facilitated by the increased autonomy and resources independent schools access, in comparison to state funded schools.

*“Because we’re an independent school, we’re not constrained by the national curriculum so we put in some extra modules on you know, healthy living really, which as well as covering exercise and diet, also covers dangers of drugs, smoking and alcohol.”***Participant 5 (Headteacher)**

For many across both state funded and independent schools, the desire to create a school culture and ethos that promoted the value of healthy lifestyle behaviours was often driven by the understanding of the reciprocal relationship between health and academic performance.

*“I think that government put so much pressure on them to get a good Ofsted I think it takes a very very brave head to break the trend and actually say “this is really important, I actually don’t care what you say Ofsted, I know and believe that if kids are playing sport their academic achievements will improve”, it takes a very brave head to take that step.”*  **Participant 14 (Headteacher)**

*“I lose £70k a year on catering, but if I don’t put that in then I know kids aren’t going to get you know a nutritional meal and I know it will affect their lives and also their education.”*

**Participant 21** **(Headteacher)**

6.7.3 Role modelling in schools

A topic of consideration and at times concern across participants was the aspect of role modelling in secondary school settings.  Discussions about positive and negative role models, centred on how the weight status, dietary habits and physical activity behaviours of schoolstaffimpacts upon the lifestyle behaviours of pupils.   In the main, headteachers and chairs of governors felt that teachers and support staff should model healthy behaviours where possible, within a school environment.  This was due to the belief that it would enhance the credibility of healthy lifestyle messages students receive through formal education, extra-curricular activities and the wider school environment (i.e. school catering).

*“The receptionist, she ran the marathon last year.  But we made big thing about it, in school about the fundraising and celebrating it.  And it’s this idea of you know, being fit and healthy is beyond children almost so that we role model.”***Participant 1 (Headteacher)**

For many, reflections from headteachers were presented in regards to how their own lifestyle behaviours, demonstrated within the secondary school setting, had the potential to set a good or poor example to students.

*“Children see me eating healthily because I do eat healthily in the canteen when we do eat. Things like Comic Relief, Sport Relief, I was out there.”***Participant 19 (Headteacher)**

Headteachers more so than chairs of governors, presented extensive examples of where school staff had engaged in or demonstrated healthy eating and physical activity practices in school.  Frequent reference was made to staff joining students for lunch within the school’s dining facilities, not only to encourage healthy eating practices, but to promote the social value role of food.  In addition, some headteachers reported staff participation in sporting events that were organised for the purpose of fundraising.

*“Also staff modelling healthy eating with them, at lunchtime, staff sitting with students and eating. And chatting, so it’s a social occasion.”*  **Participant 22 (Headteacher)**

Role modelling became an extremely contentious and sensitive issue for the participants when exploring the issue of obesity in school staff.  Many participants identified that there were issues with excess weight prevalence, both amongst their colleagues within school or within the governing body.

*“And we went through the staff [laughs] and the one who is seriously overweight she left last year, she was still commented on. So other, I don’t, oh yes and there was one teacher who was identified and the reason for that was he likes his beer too much to give up his drinking so that was definitely a beer belly type of scenario.”***Participant 16 (Headteacher)**

Most identified a potential hypocrisy that could arise from an overweight or obese staff member promoting healthy weight or lifestyle messages, either through the formal curriculum (PSHE, physical education, food technology), or more broadly within a pastoral role.  A commonly shared view was that the credibility of healthy weight or lifestyle messages cascaded to adolescents, would be negatively affected if delivered by an overweight or obese teacher.

*“I know the SENCO (Special education needs coordinator) has a session with parents, but I don’t think she’s the right person to certainly handle obesity.”***Participant 13** **(Chair of governors)**

*“Because?”***Interviewer**

*“Because of her personality, because of her nature and because the fact she’s pretty fat [laughs].”***Participant 13** **(Chair of governors)**

*“I don’t think if I was being told by someone very overweight that I need to be less heavy I don’t think I*

*would be keen to listen to that advice.”***Participant 16** **(Headteacher)**

Despite these concerns, it was viewed that addressing or determining an employee's dietary habits, physical activity behaviour and weight status are outside of the remit of the school employer. Headteachrers and chairs of governors therefore felt a school had no right to intervene.  This was especially relevant, if it was deemed that a staff members weight status or lifestyle behaviours didn’t actually impact upon their ability to perform their role.

*“I don’t think you can impose it on staff, it’s not part of their job description that they’ve got to be slim and healthy but, but it’s good to set an example.”***Participant 11** **(Chair of governors)**

*“I think lifestyle and so that children can see that teachers are living a certain lifestyle is good, but you have to be careful how far you go and I don’t think you could penalise a teacher for excessive weight, but children do notice.”*  **Participant 15** **(Chair of governors)**

One chair of governors reflected on whether if someone was applying for a position within a school, whether their weight status would actually affect the recruitment outcome.

*“So you certainly can’t make it a requirement and you certainly in a selection process you know wouldn’t say “well you’ve got to choose only the thin ones”, you choose the best, although if you had two and it were neck and neck you might go for the one who’s had a healthier lifestyle, if you’ve got one who’s morbidly obese and the others got a standard BMI.”*  **Participant 20 (Chair of governors)**

An additional reason given by participants for not wanting to discuss or address issues of excess weight in staff, was the fact that it is too complex and awkward a subject to even raise.  Furthermore headteachers and chairs of governors expressed concern and fears around causing or being perceived to cause discrimination and stigmatisation.  Subsequently, one headteacher proposed that you ‘tip toe’ around the issue to avoid upsetting people.

*“When you’ve got obese, we’ve got obese people on our governing body, I would guess, so it makes that conversation so much harder.”*  **Participant 12** **(Chair of governors)**

In stark contrast to the issue of obesity, it appeared other lifestyle issues such as smoking were much more openly discussed in schools, often due to strict rules in place governing employee behaviour, i.e. no smoking on or near to a school site.  It was generally perceived that this regulatory approach was justified given the clear health implications of smoking, and the negative example staff it would set to pupils and the wider community.

*“Members of staff that smoke, but they go for a cigarette break how they hide that or not is really important I think. I wouldn’t want my staff to be blatantly smoking at the end of the drive for example because that’s sending the wrong message, but when you get into excess weight, I don’t know, I don’t know.”***Participant 21 (Headteacher)**

Both headteachers and chairs of governors reflected on the fact that school staff and they themselves were not immune to the same societal pressures discussed in relation to adolescent obesity.  One participant identified that if the school’s employees live within the same communities as their student population, then the same influences of place especially in relation to deprivation and the wider food environment would impact upon their the staff weight status.

*“So if you look at the staff of our school you’ll see you know, some people and actually I hate to say it, but the sort of ones with significant weight, I’ve got a bit of a tummy, but you know you’ve got people who are morbidly obese and they’re often home bread, not always.”*

**Participant 20 (Chair of governors)**

Across the board, both headteachers and chairs of governors extensively shared personal experiences of their own experiences of health.  This included frequent reflections on their own weight status and lifestyle behaviours.  Some revealed very personal struggles with obesity and their resultant health issues, reflecting on the influences throughout their lives that led them to be above a healthy weight.

*“As a child from the Lake District of parents with little money we ate basic food, we didn’t have the treats etc so we only ever had healthy, but cheap food. And then when I was in the sixth form, studying for my A-Levels the way my mum would treat me would be to buy me things to eat, which would be the wrong things to eat, which would be sweets and so I remember getting quite big.”*

**Participant 22** **(Headteacher)**

For one headteacher, he decided to share with school staff his own experiences related to excess weight gain and resultant weight management.  By demonstrating understanding through his lived experience and empathy for those in the same position, the perceived social awkwardness of discussing obesity with school staff was deemed to be reduced.

*“I do feel conscious of my own battles with my own weight and what I do with weight and currently losing weight and I do talk about that.”***Participant 19 (Headteacher)**

Of particular relevance to headteachers were the increasing demands of their jobs and the impact of this on their physical and mental health and well-being.  This was deemed to present significant challenges to being able to make healthy lifestyle choice and consequently maintain a healthy weight.

*“My first year here was horrendous cos I don’t normally stop for lunch or anything and PA said to me, since I’ve been here I actually have put on a stone and a half in three years, and I know that is about too long hours, I don’t exercise anymore, cos I don’t have time, well that’s not quite true, I could on a Saturday, but I’m a mum as well and I choose to spend time with my son.”*

**Participant 8 (Headteacher)**

6.7.4 Leadership and governance

Participants frequently reflected upon the varying decision making processes and levels of accountability within school leadership and governance. These processes were deemed to affect what, how, when and why, action contributing to adolescent obesity prevention is established. A broad consensus existed across both participant groups, that whilst not without it challenges and tensions, chairs of governors and headteachers perform distinct and complementary roles within a secondary school setting.

Chairs of governors reported the belief that they and their governing body have an overarching strategic responsibility for a school as opposed to performing an operational role within the school setting.  Chairs of governors discussed being a school’s ‘critical friend’, providing support and guidance, whilst at the same time holding the headteacher to account for both academic and financial performance.

*“The governor’s job isn’t day to day, our job is to stand back is to allow our managers to manage and our leaders to lead, but take an overview so I hold the head to account for what he does and so does the governing body, so we hold him to account, we set the strategic direction, we set the values and aims of the school and then we check, and we challenge and we support.”*

**Participant 18 (Chair of governors)**

Headteachers on the other hand, were in the main referenced as undertaking the primary leadership role and having overall operational responsibility for the day to day school management and decision-making.  Headteachers themselves, referred to their role in setting priorities that aim to support the delivery of their school’s vision and ensure their school is academically and financially performing.

*“The governors only appoint a head whose vision they buy into and of course they hold you to account regularly don’t they in order to try and find out that you are delivering on the vision that you believe in, it’s a vision that’s true and that it’s fair.”***Participant 10** **(Headteacher)**

In relation to a school’s action contributing to obesity prevention and the improvement of adolescent lifestyle behaviours, a clear distinction was made between the roles and responsibilities within leadership and governance.  As detailed in 6.6.2, both headteachers and chairs of governors supported the concept that schools should and in fact where feasible, do prioritise and take action to improve adolescent lifestyle behaviours.

When reflecting upon their role in this process, chairs of governors from state funded schools reported how two of their key governance functions contribute to improving lifestyle behaviours and therefore the prevention of obesity in adolescents.  The first function centred on ensuring the headteacher and the school meet their statutory obligations, in relation to the provision of education, services and opportunities that could influence dietary and physical activity habits, e.g. curriculum requirements, food standards and catering and access to school nursing services.

*“Well, I suppose, our role is to challenge and support schools to provide the best education for children and within that is the best education around healthy eating, food choices, making sure that we’re providing you know, food education for students, making sure we’re providing adequate physical education for students so it’s, our role is more strategic, it’s about challenging schools to make sure they do those things.”***Participant 11** **(Chair of governors)**

Secondly and for some more significantly, was the function chairs of governors perform in monitoring how the headteacher manages and allocates financial resources. This was especially pertinent in relation to the procurement of school catering providers and reviewing school catering budgets.  Due to its financial implications this was deemed a high priority issue for both governance and leadership.

*“We’ve had a lot of conversations about catering and about the quality of catering and I think you’ll find, I’ve also been a clerk to the governing bodies, so sat in a lot of other governing bodies, there’s a lot of conversations about the quality of school meals, catering.”***Participant 3 (Chair of governors)**

Aside from these two functions, most chairs of governors reported minimal direct involvement in whether and how, a school sets priorities or directs action for improving adolescent lifestyle behaviours.  This was attributed by most to three main factors.  Firstly, despite chairs of governors expressing support for action, it was deemed an operational matter, which should be led by the headteacher. Secondly, given increasing government pressure on governing bodies to focus on a school's academic results and financial management, a lack of capacity was deemed to exist to discuss topics outside or on the fringes of this remit.

*“The demands of Ofsted and attainment and meeting thresholds are just overwhelming really, you know, they, they, they dominate what the governing body talks about and where the heads puts the money.”***Participant 4** **(Chair of governors)**

*“But the issue itself of the effect on children of obesity has never come up and my guess is it’s not seen as, if I were to say, obesity is on the agenda, I think one or two governors would say “well actually haven’t we got more important things to discuss?”*  **Participant 15 (Chair of governors)**

Thirdly, some chairs of governors reported having a limited awareness about adolescent obesity and preventative action occurring in their school.  A minority raised concern about whether they should know this information and whether they should be asking more ‘searching’ questions of the headteacher.  The majority however felt that given this was is an operational level matter, and the fact that their respective headteachers had never raised the issue, their awareness or direct involvement was therefore deemed to not be required.

*“Now having said that, I have a weekly meeting with the headteacher and it’s never ever ever been raised with us. Ok, having said that, I’m quite sure that were it an issue it would be raised for, with the governors, but it never has been, but if it were, we would take it certainly take it very seriously and tackle it.”*  **Participant 13** **(Chair of governors)**

One chair of governor reported that at times the media have the power to inform discussions within a governance environment, and influence topics for consideration, including those related to adolescent health and well-being.

*“I have to say when certain things become newsworthy beyond the school, like there was an issue of a school where parents were pushing fish and chips through the bar and all of a sudden at a governors meetings, one of the governors said “there’s nobody doing that here is there?” and it became an issue for discussion and it was felt no that wasn’t happening and wouldn’t be allowed to happen.”***Participant 15 (Chair of governors)**

In spite of the variations in current awareness and direct involvement, some felt that if they or the governing body did identify or perceive a significant health issue to exist within their school population (i.e. obesity or mental health), they would have the ability and authority to influence the headteachers and school's action.

*“So if any of the governors or if I wanted to put one the agenda an issue about excess weight, we could, then there would be a discussion and then the senior leadership team would be told to take that away and come up with the policy or whatever.”*  **Participant 2 (Chair of governors)**

It was proposed by some, that having training for governors on obesity and more broadly in relation to adolescent health and well-being could be useful for increasing the perceived value of schools taking a more preventative and proactive approach.

*“It’s not compulsory for governors to have any training of any description, but some training on health, obesity, all those issues, which would provided to governors so they could ask the right questions and see it as a priority within their portfolio of work would be quite helpful.”*

**Participant 3 (Chair of governors)**

Supporting chairs of governors’ view, headteachers felt that they have the decision making power at an operational level to decide whether, what, when and how action is directed towards improving adolescent lifestyle behaviours.  This was also discussed more broadly than preventing obesity, with headteachers typically viewing themselves as the most critical factor for determining a school's priorities, ethos and overall culture.

*“If I decided to make it a priority within the school, one of my vision, one of my whatever else, I think the school would buy into it, the staff would buy into it and we’d get the students to buy in to into. You’d still have issues around it and it’d happen. Simple as that.”*  **Participant 19 (Headteacher)**

For some, having an overall leadership responsibility was a double edged sword.  The role of headship, was suggested to provide meaningful opportunities to determine how and in what way a school makes a difference to adolescents’ lives including around health and well-being.  Despite this, it also led to the suggestion that headteachers and their respective schools are at times inappropriately held accountable for issues within society that are over and above their remit, e.g. health outcomes and social behaviour.

*“Well, the first thing I would say, is that everyone blames schools for everything that goes wrong. I don’t think schools can sort out all the ills of society and I think its utterly unreasonable to expect schools to sort out all the ills of society.”***Participant 3 (Chair of governors)**

*“Yeah I’m responsible for everything, so any fat child is my fault, that’s the way it goes.”*

**Participant 9** **(Headteacher)**

When exploring their role in relation to the prevention of adolescent obesity, headteachers provided extensive examples of where they had utilised their authority and high-level decision making, to direct action related to the curriculum, the provision of school catering and school sport.  This included putting in place school systems, structures and rules, developing and reviewing strategies and policies and allocating funds.

*“I see my role really is is, collecting the data and evidence, are the strategies working, if they’re not how can I create capacity in a very stretched system and sometimes it means using surplus of funds, but very often it means redirecting those funds for greater impact.”***Participant 8 (Headteacher)**

During discussions about the range of preventative actions within a secondary school, headteachers reflected on how their own interests and experiences shaped their values, and the emphasis they therefore placed on improving adolescent lifestyle behaviours in school.  For some this related to their childhood and for others it related to their early career and training.  A minority of headteachers from state-funded schools, reflected on whether their original teaching roles in physical education or food technology developed their values, and the importance they ascribed to these topic areas.

*“I was a good, good, PE teacher, good motivator, good coach [...] it’s always been about people taking part and trying to get as much out of it as possible.”*  **Participant 6 (Headteacher)**

In addition to discussing their individual roles, participants expressed views regarding the partnership arrangements between headteachers and chairs of governors.  In the main it was perceived that close working relationships existed with clear accountability structures, defined roles and open channels of communications.  A small minority of headteachers and chairs of governors however highlighted challenges in respect to the relationship dynamics between school leadership and governance.  Some attributed this to a perceived variation in knowledge and governance skills within their own governing body and not merely around preventing obesity in schools, but more broadly.

*“There are significant challenges to recruiting governors that they are able to fulfil the statutory requirements around governance.”***Participant 20 (Chair of governors)**

Consequently for one headteacher, it was deemed a necessity to skill up their own governing body. This was so that governors are able to ask the right questions and develop a more comprehensive understanding of the needs and experiences of young people outside of a purely academic lens.

To summarise the final theme, participants clearly identified a secondary school has both a responsibility for and role within excess weight prevention, with a substantial range of action and activity contributing to preventative action.  Despite this, inside their school setting, the complexities of competing priorities, role modelling and leadership and governance affect both their willingness and perceived capability to prevent excess weight gain in adolescence.

**Chapter 7**

**Research methods of quantitative phase**

**7.1 Introduction**

This chapter presents an-depth account of the methods employed during the quantitative phase.  As detailed in chapter four, the chosen research approach (mixed methods) and design (exploratory sequential design), required a two phase approach to collecting, analysing and integrating study data.  Consequently, as a result of completing the core qualitative phase, the researcher then progressed onto the supplementary quantitative phase. Fundamental to this progression, was the integration undertaken by the researcher to utilise qualitative findings obtained through semi-structured interviews, to inform the collection and analysis of survey data in the quantitative phase.

This chapter begins with a description of how the researcher approached the crucial task of integration, detailing the steps undertaken to ensure a robust approach was employed.  Following this, the chapter then provides a comprehensive explanation of the survey methods employed, including details of which research technique was used to obtain survey data, i.e. development and subsequent distribution of an online questionnaire.  Having discussed the process and outcomes of developing the content of an online questionnaire from qualitative findings, the procedures followed for pilot testing the data collection instrument are reported.  The approach utilised to sample and recruit participants to this phase of the research, is then presented in addition to the methods employed for handling and analysing the resultant survey data.  Similarly to chapter five, this chapter concludes by reflecting on the ethics procedures relevant to the quantitative phase.

Aim and objectives (quantitative phase)

Prior to the main description of the methods, it is important to restate the research aims and objectives of the quantitative phase.

Aim 2

Within the supplementary quantitative phase, determine the relevance of the qualitative findings outside of their original context by conducting a descriptive cross-sectional survey, which identifies headteachers’ and chairs of governors’ opinions and attitudes towards adolescent obesity and its prevention in English secondary school settings.

*Aim 2 Objectives*

* Develop and pilot test an appropriate survey data collection tool, i.e. online questionnaire, for use with a larger sample of secondary school headteachers and chairs of governors
* Design the structure and the content of the online questionnaire around the analysed qualitative findings and resultant themes
* Distribute the pilot tested online questionnaire to the census of secondary school headteachers and chairs of governors in England
* Utilise descriptive and inferential statistics to analyse survey data and examine relationship between demographics and identified attitudes and opinions

**7.2 Approaching the task of integration**

As extensively discussed within chapter four, a mixed methods exploratory sequential design begins with a priority explorative qualitative phase and is followed by a supplementary follow-up quantitative phase.  The exploratory sequential design is useful for assessing the generality and relevance of the core qualitative findings across a wider sample of the population under study.  In addition, a key feature and further advantage of this design, is the ability for qualitative findings obtained in the first phase to be utilised to inform the survey method for use in the quantitative phase, i.e. a questionnaire.   This ability was deemed a necessity for the given research, as a pre-existing quantitative instrument that could address the overarching research aims and objectives was not available.

At the point of selecting the exploratory sequential design, it was decided that the most appropriate data collection method for the explorative core qualitative phase, would be semi-structured interviews (as discussed in chapter five).  In order to meet the proposed aim and objectives in the quantitative phase, a survey method employing an online questionnaire to obtain research data was deemed the most appropriate.  Critical to this research design was carefully establishing a robust approach to how integration between the two phases, and their respective methods could be effectively achieved. More specifically, how the qualitative semi-structured interview findings would be utilised, to develop the structure and content of the data collection technique within the survey method (i.e. an online questionnaire).

To establish and employ a robust approach to integration, the researcher began by reviewing the research text that had informed this study’s adoption of mixed methods typology and design in Creswell and Plano Clark (2011).  The theoretical and methodological considerations relating to the development of a quantitative instrument through qualitative interview findings, were reflected upon.  As a result of a perceived lack of specific direction for undertaking the task within this text, a wider reflection on other mixed method typologies and associated ‘instrument development’ type designs was undertaken (Greene et al., 1989; Creswell, 2003; Tashakkori and Teddlie, 2009; Morgan, 2014).  Furthermore, a broad scoping search of the literature was conducted to obtain research papers where the adoption of an exploratory sequential design or similar (within alternative mixed methods typologies) was reported.

Whilst identifying and reviewing relevant literature was useful in providing an overview of the overarching processes involved in developing a quantitative instrument from qualitative findings, there remained a paucity of clear and descriptive methodological guidance.  For example, it was broadly suggested that themes, codes and quotes resulting from analysed qualitative data, could play a role in developing survey content.  However, specific guidance on how this task was methodologically achieved was not reported or discussed.

As a result, prior to the completion of the qualitative data analysis, the researcher spent approximately 6 to 8 weeks engaging with researchers from across the world.  This engagement was undertaken to obtain greater clarification on how to robustly develop a quantitative instrument from analysed qualitative findings, and ensure effective integration of the distinct research phases.  This process of engagement included the researcher emailing all PhD students in three faculties and staff in one faculty (at The University of Sheffield), and asking those with relevant experience of the chosen design to share the practical steps they employed.  In addition, the researcher asked for the same guidance from international academics through ResearchGate – an international academic networking website.

Over 50 responses from PhD students and academics were obtained, with the researcher communicating through email, via telephone and face to face to discuss their extensive yet significantly different experiences.  For many, they had employed the exploratory sequential design for a variety of uses, e.g. for developing surveys, creating health measurement instruments and testing specific psychological constructs.  Regardless of the designs use, having reviewed the feedback obtained, it was apparent that a standard approach or framework for building quantitative instruments from qualitative findings did not appear to exist.  Valuable personal dialogue with Professor David Morgan (Portland State University), a world leading expert on mixed methods and multi-method research, confirmed this position. In addition he stated that the specific process or steps for developing surveys from qualitative findings are ‘seldom reported’ in academic literature (Personal communication, Professor David Morgan, 2016).  Consequently, the overarching guidance received regarding integrating the qualitative and quantitative phases of this design, primarily centred on the need to adopt a tailored approach, choosing methods or practical steps, which best suited specific research aims and objectives.

As a result of reviewing aforementioned mixed methods research texts (Greene et al, 1989; Creswell, 2003; Tashakkori and Teddlie, 2009; Creswell and Plano Clark, 2011; Morgan, 2014) and undertaking this extensive engagement, the researcher reflected on which elements of the obtained guidance would be most relevant for this doctoral study. The following sections therefore present a detailed account of the approach for integrating the two study phases and the methodology employed for collecting and analysing survey data.

**7.3 Survey research**

The term ‘survey’ in research is applied in various ways (Kelley et al., 2003), although survey research is broadly proposed as a *“method of collecting, organising and analysing data”* (De Vaus, 2002, p.5). Although often interchangeably and mistakenly referred to as questionnaires, the term survey does not simply relate to a data collection tool or technique (as with the term questionnaires), (Sue and Ritter, 2007).  A survey is in fact a system comprised of several different activities, which include establishing the study objectives and design, preparing and administering a reliable and valid instrument, and analysing and reporting results (Fink, 2003; Dillman, 2007). Consequently, it is argued that researchers should take a holistic view of a whole survey process in order to ensure that data obtained will address the overarching aims and objectives of the study (Sue and Ritter, 2012).

Surveys are generally regarded as being *“inherently quantitative and positivistic”* in nature (DeVaus, 2002, p.5), and their purpose can be broadly characterised as either ‘descriptive’ or ‘analytical’ (Bowling, 2014).  Descriptive surveys are typically designed to describe and measure certain phenomena (i.e. knowledge, attitudes, behaviour, beliefs), whilst analytical surveys aim to investigate causal associations between variables, within a population of interest (Oppenheim, 1992; Green and Browne, 2005; Bowling, 2014). Furthermore, surveys can be defined as cross-sectional (a type of descriptive survey), in which data is collected at one point in time (Creswell, 2009b), or longitudinal (a type of analytical survey), in which research data is collected over a period of time on multiple occasions from the same sample in a population of interest (Bowling, 2014).

Having reflected upon the previously stated aim and objectives for this phase of the research, the decision was made to undertake a descriptive cross-sectional survey.  The use of an analytical survey including longitudinal, was discounted on the basis that the researcher was not aiming to investigate cause and effect relationships between variables under study or measure trends in attitudes or opinions over time.  The aim of the survey was to provide additional evidence within a mixed method study, which could support the generality of the core qualitative findings obtained in the first phase.  Consequently, the researcher was interested in investigating and describing the phenomenon of interest (headteachers’ and chair of governors’ attitudes related to adolescent obesity and its prevention in English secondary schools) at one point in time.

7.3.1 Techniques to collect survey data

An essential activity when conducting surveys is determining, which research technique or instrument will be utilised to obtain survey data (Oppenheim, 1992).  Fink, (2003) proposed that there are four types of survey instrument, which can be employed for data collection: self-administered questionnaire, interview, structured record review and structured observation, with questionnaires argued to be most common research technique (DeVaus, 2002).  The term questionnaire relates specifically to a highly structured set of questions, utilised to obtain information (Wilson et al., 1994). Whereas other types of survey instrument (i.e. interview or observation) require the presence of a researcher, self-administered questionnaires enable respondents to answer questions themselves. Self-administered questionnaires take a variety of forms most typically postal and online (Bryman, 2016), with new technological advances resulting in substantial growth of the latter i.e. through web, email and mobile formats (Sue and Ritter, 2007).

Despite the argument that online questionnaires result in lower response rates than postal questionnaires, they are deemed to be less resource intensive, provide better data accuracy and can be presented in attractive stylistic formats (Bryman, 2016).  In order to yield as many responses as possible, the intention was to distribute the data collection tool to the entire population under study, i.e. the census of approximately 4,650 secondary schools in England (see section 7.7).  The researcher did explore the use of distributing postal questionnaires, but this was discounted due to the substantial cost implications (over £2500).   Consequently due to resource constraints an online (web-based) questionnaire distributed via email, was deemed to be the most pragmatic choice.  The following sections detail the specific methods employed to develop and distribute the online questionnaire.

7.3.2 Development of questionnaire content

Oppenheim (1992) argues that the *“formulation of any questionnaire to be used in a survey must be an integral part of the research design stage”* (p.10). In regards to the formulation of its content, Gillham (2000) proposes that topics or questions used within a questionnaire typically fall into three categories:

* Questions of fact (i.e. demographics)
* Questions about perspectives (i.e. opinions, beliefs, judgements or attitudes)
* Questions about behaviour (i.e. what people do)

Resulting from the reflective process, was the decision that the data collection instrument would include questions of fact and questions about perspectives (i.e. opinions, beliefs, judgements or attitudes).  In relation to the former, it was deemed necessary for the questionnaire to include factual demographic questions (regarding both the participant and the school they were representing), in order to identify potential similarities or differences in perspectives based on specific variables of interest, e.g. participant role, gender, school type, free school meal percentage.  For the remainder, and indeed majority of the questionnaire, it was decided that the focus would be on presenting an item pool of questions and statements about perspectives of the topic under study (i.e. adolescent obesity and its prevention in secondary school settings).  As previously and extensively discussed, the analysed qualitative findings would provide the basis for generating the pool of items for inclusion in the questionnaire.

7.3.3 Generating the item pool

Fundamental to achieving effective integration between the two study phases was the researcher’s ability to transform the qualitative findings into meaningful items (i.e. questions and statements), which would allow participants perspectives to be identified.  This process was crucial in order to determine whether the perspectives obtained in the first phase, were indeed applicable and shared amongst a wider pool of the target study population in the second phase. Consequently, to inform the process of generating the item pool, the researcher spent an extensive period of time reflecting on the completed thematic analysis and resultant qualitative findings report.

As per guidance provided by PhD students and academics, and in support of Creswell and Plano Clark (2007) and Morse and Niehaus (2009), this period of reflection included a thorough review of all aspects of the analysed qualitative findings, i.e. themes, sub-themes and quotations presented within the qualitative findings report.  This was undertaken in order to carefully identify and assess which elements of the qualitative findings report could, or should, form the basis of content for the questionnaire, i.e. within the item pool (Creswell and Plano Clark, 2011).  Whilst significantly time consuming, it was deemed necessary to undertake this reflective period. This was so that the researcher was being both robust and systematic, when determining potential areas of interest within the qualitative findings for inclusion in the finalised questionnaire.

Given that the qualitative findings report was substantial in both its scope and size, the potential for developing questions and statements became substantial.  It was important for the researcher to achieve a balance between ensuring the questionnaire was an appropriate length (i.e. for maximising the response rate), and developing content that reflected the breadth of issues within the qualitative findings.  Therefore, the researcher went through a series of defined steps (figure 7.1) to effectively manage the process.

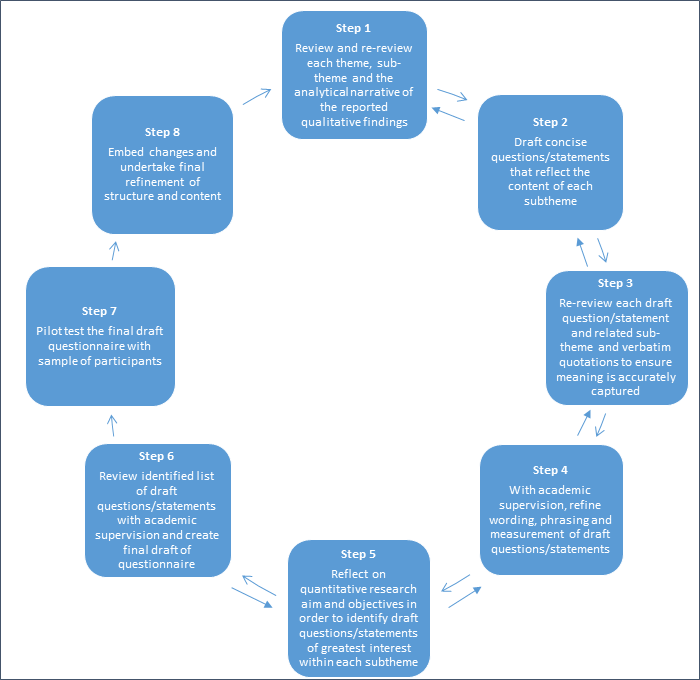


Figure 7.1 - Eight steps performed to generate, pilot test and finalise the item pool from qualitative findings

Whilst presented as a cycle of steps, the process was in fact iterative in nature and particular steps took considerably longer to complete.  For example steps two, three and four where questionnaire statements and questions were initially drafted, reviewed and refined, required a significant time commitment.  This iterative approach to the content development process was crucial, in order to ensure fidelity of the questionnaire as a data collection tool, i.e. its usefulness, appropriateness and utility (Onwuegbuzie et al., 2010).

In addition to being iterative and collective, the process of generating the item pool was underpinned by a number of key considerations, which had been identified from both research texts (Oppenheim, 1992; Gillham, 2000; de Vaus, 2002; Edwards et al., 2002; Onwuegbuzie et al., 2010; Creswell, 2014; Bryman, 2016) and the previous engagement process undertaken:

* Questionnaire content, i.e. questions and statements were written in a manner which accurately portrayed the meaning of the reported qualitative data
* Language used centred on being clear, concise and unambiguous with multi-faceted and double-negative questions avoided
* Words and phrasing aimed to be reflective of the language used by participants (including keeping statements in positive or negative form as per participant's original perceptions)
* Length of the questionnaire was carefully managed so that meaningful information could be obtained at the same time as maximising the response rate
* Content was presented in a logical manner and adopted a user friendly format with clear instructions

Resulting from the completion of steps one through to six of the above process (i.e. prior to pilot testing the questionnaire), was a final draft item pool or list of questions and statements.  Aside from a small number of open questions included to allow discovery of perspectives not previously obtained in the qualitative interviews (Gillham, 2000), the resultant item pool was predominantly made up of closed opinion statements derived directly from the content of each theme and sub-theme (as detailed in the qualitative findings). Table 7.1 provides examples of the relationship between themes and sub-themes and the resultant opinion statements.

Table 7.1 - Transforming themes and sub-themes to opinion statements

|  |  |  |
| --- | --- | --- |
| **Theme** | **Sub-theme** | **Related statements in the questionnaire**  *(Participants were asked to respond by indicating their level of agreement with the following – Appendix K)* |
| *Theme 1*  Perceptions of adolescent obesity and lifestyle behaviours | *Sub-theme 1*  Issue of obesity prevalence | Section 3 (Q1.1) – I am concerned about levels of excess weight |
| *Sub-theme 3*  Physical activity and sedentary behaviour | Section 3 (Q4.5) – I believe that secondary school pupils from my school in general - Spend too long being sedentary |
| *Theme 2*  Influence of place | *Sub-theme 1*  Home environment | Section 5 (Q1.1) – A secondary school pupil’s home environment is more influential in the prevention of excess weight gain than the school environment |
| *Sub-theme 2*  Wider food environment | Section 5 (Q2.1) – I am concerned about the availability of junk near to my secondary school |
| *Theme 3*  Shared responsibility, collective solutions | *Sub-theme 1*  Continuum of responsibility | Section 5 (Q3.4) – The following have a responsibility for preventing excess weight gain in secondary school pupils? - Government |
| *Sub-theme 2*  Approaches to behaviour change | Section 5 (4.7) – The following are effective for preventing excess weight gain in secondary school pupils – Taxation, e.g. sugar tax on sugary drinks |
| *Theme 4*  Secondary school setting | *Sub-theme 1*  Action contributing to obesity prevention | Section 4 (Q4) – Within my secondary school setting - We meet the requirements of the school food plan |
| *Sub-theme 3*  Role modelling | Section 4 (Q1.5) – Within my secondary school - School staff should role model healthy lifestyles to secondary school pupils |

The researcher attempted to write each opinion statements as close as possible in meaning and sentiment to the perspectives expressed by participants in the first phase of the study.  For example within the qualitative findings report, in the main headteachers and chairs of governors perceived pupils who are in receipt of free school meals are more likely to be overweight or obese, have unhealthier diets and do less physical activity.  Consequently, corresponding statements were written so that they clearly and concisely encapsulated these opinions.  The level of agreement for each statement and therefore the opinions obtained within the qualitative phase were measured through the use of Likert scales, a response scale used for *“measuring opinions, beliefs and attitudes”* (DeVellis, 2003, p.79).

7.3.4 Measuring the item pool

Aside from demographic questions, four open questions and a single question asking participants to estimate excess weight prevalence, the item pool consisted of a series of closed opinion statements.  These were used as single indicators to measure a broad range of concepts related to adolescent obesity and its prevention in secondary school settings.  It was deemed impractical to utilise multiple indicators to measure each individual concept under study, e.g. responsibility for obesity, given the researcher wanted to incorporate the breadth of concepts or topics arising from the qualitative interviews.  Consequently each single indicator, i.e. closed opinion statement, was measured against a Likert rating scale, which allowed participants to indicate their level of agreement.

Developed in 1932 by Rensis Likert, the Likert scale has been *“used more often than any other rating device for measuring attitude”* (Foddy and Mantle, 1994, p.180). Argued to *“combine the opportunity for a flexible response with the ability to determine frequencies, correlations and other forms of quantitative analysis”* (Cohen et al., 2007, p.253), Likert scales are widely recognised for their usability and reliability (Oppenheim, 1992).  In general Likert scales are employed to investigate attitudes and measure the *“intensity of feelings about the area in question*” (Bryman, 2016, p.154).  Providing ordinal data, where observations are grouped and ranked, Likert scales typically allow participants to indicate their level of agreement to various opinion statements often by use of a five point rating scale, i.e. strongly agree, agree, neither agree or disagree, disagree or strongly disagree (Oppenheim, 1992; Foddy and Mantle, 1994, Bowling, 2014).

Whilst Likert scales are argued to be the most commonly used, many other types of response scales exist (e.g. Thurstone), which aim to measure survey participants perspectives, i.e. opinions or attitudes (Oppenheim, 1992).  Furthermore whilst widely employed in academic research, their use as a response scale is not without limitations (Cohen et al., 2003), namely it is not possible to assume equal intervals between categories (i.e. agree and strongly agree) or infer intensity of feeling between categories (i.e. strongly disagree and agree versus strongly agree and disagree).  In addition, presenting closed statements as with Likert scales, means negating the opportunity for participants to add opinions they deem to be more important than the various ones presented (Cohen et al., 2003).

Despite these issues, the researcher decided to adopt a five-point Likert scale for measuring responses to the opinion statements developed.  As a novice mixed methods researcher and being new to survey methods, the familiarity of Likert scales for both researcher and participant (Robson, 1993) and perceived usability meant it was an appropriate choice (Tittle and Hill, 1967; Bryman, 2016).  In addition, despite being argued to be more reliable than the Likert scale, the use of Thurstone scales was discounted given the perception that its construction is more labour intensive and complex (Oppenheim, 1998).

The decision to adopt a five-point scale as opposed to a three or seven point alternative, was in recognition of its perceived increased reliability and practicality for participants completing the questionnaire (Krieg, 1999; Cohen et al., 2003).  It was deemed important for the five point scale to include a neutral option (i.e. neither agree or disagree), to remove the possibility of those without an opinion artificially selecting one (Robson, 1993).

In recognition that the qualitative findings could not be argued to be representative of the population of interest, four open questions were provided with the aim of enabling participants to express opinions not previously evidenced in the earlier phase of research.  As the open questions posed within the questionnaire lend themselves more to qualitative data collection and analysis, it was not necessary or indeed appropriate to quantitatively measure the answers obtained.  Instead, depending on the number of responses received, the intention was to collate, reflect upon and summarise additional comments within the Quantitative results chapter (chapter eight).

**7.4 Quality in quantitative research - Validity and reliability**

In general, the way in which the quality of a quantitative data collection instrument is assessed is through the criteria of validity and reliability (Bryman, 2016).  Fink (2002) argues that a reliable survey instrument is ‘consistent’ and a valid survey instrument is ‘accurate’.

7.4.1 Validity

In relation to the validity of a questionnaire, Hammersley, (1992) argues that *"an account is valid or true if it represents accurately those features of the phenomena that it is intended to describe, explain or theorize"* (p.69).  Therefore, the validity of a survey instrument refers to the degree to which the instrument measures what it is designed to measure (Peterson, 1999; Coolican, 2004). In contrast to external validity, which refers to the generalisability of research findings (Bowling, 2014), this type of validity is internal and four types are frequently discussed in academic literature - face, content, criterion and construct (De Vaus, 2002; Fink, 2003).

Initially, the researcher considered the face validity of the questionnaire content.  Proposed as *“an essentially intuitive process”* (Bryman, 2016, p.159), examining face validity requires an assessment of whether a measure accurately reflects the phenomenon of interest under study, and if the questions posed are relevant, reasonable, unambiguous and clear (Bowling, 2014).  As the researcher’s academic supervisor’s had been closely involved in the research process, they were both asked to superficially assess the face validity of the questionnaire. This was done by reviewing the questionnaire’s language use, clarity and representativeness (of the qualitative findings).  Furthermore, the finalised questionnaire was subject to a pilot testing process undertaken by twelve pilot participants who again reviewed the questionnaire content and structure.

Although inherently subjective (Green and Browne, 2005), assessing face validity is more straightforward than other measures of validity and is therefore deemed to be *“a useful first approach”* (Peterson, 2000, p.79).  The detailed description of the development and conduct of the survey and associated data collection tool as provided within this chapter, aims to support the subject judgement that the survey appropriately reflected the concepts and topics under study.

Content validity refers to the *“extent to which the indicators measure the different aspects of the concept”* (De Vaus, 2002, p.54). It is argued that content validity is high when a set of measures includes multiple components, which cover all facets of a concept (Green and Browne, 2005). This type of internal validity is *“typically useful only if your instrument intends to measure a specific and well-defined attribute”* (Teddlie and Tashakkori, 2009, p.210).  As this survey aimed to present a series of single indicators covering a broad range of concepts only relevant to the qualitative findings (as opposed to well-defined theoretically established concepts), it was deemed inappropriate to assess the content validity of the survey.

The other two measures of validity (criterion and construct), which are frequently referenced within relevant academic literature (Fink, 2002; Bowling, 2014; Bryman, 2016), were not applied to this research.  Criterion validity refers to the extent to which the measure correlates with other comparable (and valid) measures of the concepts under study (Green and Browne, 2005).  Assessing criterion validity therefore typically requires comparison between the new measure and existing and well-accepted measures (or gold standard measures), (DeVaus, 2002).  Given the context specific nature of the instrument and the lack of relevant existing instruments or measures it was deemed unfeasible to assess criterion validity.  Construct validity refers to the evaluation of a measure and associated items in terms of how well they conform *“with theoretical expectations”* (DeVaus, 2002, p.54).

Assessing construct validity requires a researcher to generate and test hypotheses based on theory relevant to the concepts under study, thereby assessing whether the measure performs *“in the way that the underlying theory says it should”* (Green and Browne, 2005, p.105).  This form of validity was redundant for the given research as the lack of existing theory related to the developed measure meant it would’ve been methodologically inappropriate to arbitrarily generate testable hypotheses.

7.4.2 Reliability

Bryman (2016) states there are three prominent factors to consider when deciding whether a measure is reliable: stability, internal reliability and inter-observer reliability.  In relation to stability, i.e. whether a measure is stable over time, given the specific contextual nature of the questionnaire it was not possible or necessary to conduct tests which would assess the questionnaires level of stability.  Furthermore, as the questionnaire was designed to collect data for a descriptive cross-sectional survey, it was employed to investigate attitudes at a single point in time and not on repeated occasions (DeVaus, 2002).

The factor of, and related measures for, internal reliability, i.e. the homogeneity or consistency of items related to a particular concept (Bowling, 2014), were considered however were not deemed relevant.  As discussed previously, the questionnaire did not employ multiple-item measures and therefore did not intend to aggregate each respondent's answers to each question in order to form an overall score for various concepts.  Consequently tests that measure internal consistency between items within a scale, i.e. Cronbach’s alpha were discounted (Oppenheim, 1998; DeVaus, 2002).

Inter-observer reliability refers to a situation when more than one observer is involved in research study or where considerable subjective judgement is utilised (Bryman, 2016).  Typically, inter-observer reliability can be tested to see if *“different raters record the same responses in the same way”* (Green and Browne, 2005, p.105).  As there is only one researcher involved in the collection and analysis of survey data, tests for inter-observer reliability were not deemed to be necessary.

Despite the researcher and academic supervision perceiving it would not be necessary to perform formal tests for specific aspects of reliability, a number of steps were undertaken to maximise the questionnaires reliability in its broadest sense (De Vaus, 2002; Bryman, 2016):

* The questionnaire content was developed from the qualitative findings in conjunction with academic supervision
* Questions and opinion statements were carefully worded and aimed to be reflective of the language used by interview participants
* A formal pilot testing process was undertaken (see section 7.5.1)
* This chapter sets out a comprehensive audit trail of the survey methodology thus enabling the process to be replicated

**7.5 Creating the online questionnaire**

Once the final draft of statements and questions were compiled, it was necessary to create the online questionnaire.  As discussed previously, it was decided for pragmatic reasons that an online (web-based) questionnaire, distributed via email would be the most appropriate choice.  Whilst a variety of online platforms and software exist for both collecting and analysing survey data (i.e. SurveyMonkey, SoGoSurvey), having consulted with academic supervision it was decided that ‘Google Forms’ would be used to create the online questionnaire.  Whilst not offering the same level of customisation and analytical/reporting tools as other online survey systems, Google Forms is free, simple to use, obtains data in a digital format and is integrated with other Google apps (which are adopted by the University of Sheffield, i.e. Google Drive).

To inform the creation of the online questionnaire, i.e. building the structure and inputting content, the researcher accessed the Google Learning Centre website.  Given that the researcher had not used this system previously, this resource was useful in providing step by step instructions on how to create the Google Form, including how to effectively design the structure of the questionnaire and how to add and edit questions/statements.

7.5.1 Pilot testing

Once the online questionnaire had been created with the final draft item pool and related response scales inputted, the researcher undertook a crucial step within the process presented in figure 7.1 – pilot testing the instrument (step seven).  Pilot tests or ‘pilot surveys’ are small-scale studies essentially designed to pre-test a survey data collection instrument with a small sample of participants from the population of interest (Peterson, 1999).  The importance of pilot testing a survey data collection instrument is widely advocated for enhancing both the validity and reliability of a questionnaire (Oppenheim, 1992; DeVaus, 2002, Bowling, 2014; Creswell, 2013; Bryman, 2016).

The use of pilot testing was deemed especially important for this study, given that the questionnaire content was derived from qualitative findings and not from pre-existing tools or instruments.  By assessing the feasibility, accessibility, appropriateness and ease of understanding of the final draft questionnaire (Creswell, 2009), the pilot test was employed to maximise the questionnaires internal validity and reliability.  Furthermore, it was envisaged that by embedding relevant changes proposed by participants as a result of the pilot, this could enhance the future response rate of the final questionnaire when it is widely circulated.

Key to the process of pilot testing is ensuring that the small sample of participants chosen to test the questionnaire, review all aspects of its content and the process of navigating through the structure i.e. the respondent instructions, all questions, statements and response scales (Oppenheim, 1992). Furthermore, the following are proposed features of an effective pilot testing process (Oppenheim, 1992; Peat et al., 2002):

* Administer the questionnaire in a manner which reflects exactly the proposed methods for the real study, i.e. distribute questionnaire
* Ask each participant who pilot tests the questionnaire to provide feedback about its content and structure
* Obtain a record of the length of time each participant takes to complete the questionnaire
* Revise and amend the questionnaire and items to reflect the received feedback

7.5.2 Pilot test procedures

Having obtained ethical approval (Appendix H) to collect data for the second phase of the study, the pilot test was administered between December 2016 and January 2017.  Given that it was a pilot test and the results obtained would not form part of the final research findings, it was decided that a purposive sample of participants from the population of interest (i.e. secondary school headteachers and chairs of governors) would be both appropriate and the most convenient.  The inclusion and exclusion criteria for pilot participants remained the same as in phase one of the research -

*Inclusion criteria*  
  
- Secondary school headteachers\* (or acting headteachers) actively employed during the data collection period at a secondary school\*\* in England  
- Chairs of governors elected and serving during the data collection period at a secondary school in England

*Exclusion criteria*  
- Secondary school headteachers (or acting headteachers) and chairs of governors not actively employed or serving during the data collection period at a secondary school and/or not based in the geographic location of England  
  
\*For the purpose of the study ‘headteacher’ was used as the collective term when referring to a person who is the overarching lead within a school.  In some schools alternative titles are used to depict this position, i.e. Principal, Executive head. Inclusion was therefore based on their position as being in charge of a school, regardless of their title.   
\*\* For the purpose of the study the term ‘secondary school’ was used to denote any school in England providing secondary level education to children and young people aged between 11 to 16yrs.

Over 80 secondary schools were approached from the two regions closest to the researcher’s location (i.e. Yorkshire and the Humber and East Midlands).  Publically available contact information (generic school email addresses) for the chosen secondary schools was accessed through school websites or through the Edubase database (utilised to recruit participants in the first phase of the study).  Schools where their headteacher or chair of governor had previously participated in the first qualitative phase of the research were not invited to pilot test the instrument given their previous exposure to the topic under study (Creswell, 2014).

A personalised email was sent to each selected school asking for their respective headteachers and/or chair of governors assistance with pilot testing the online questionnaire.  The email contained a request for information, the link to the Google Forms online questionnaire five participant feedback questions:

* 1. Are there any questions or statements that are difficult to understand?
  2. Do any of the questions or statements use ambiguous or overly complex words/phrases?
  3. Are there any questions or statements that you don't feel are appropriate or relevant?
  4. Is the survey the right length, i.e. time to complete? Too long? Too short?
  5. How long did it take you to undertake the survey?

Potential participants were asked to complete the pilot test within two weeks from receipt of the email and were asked to send feedback direct to the researcher via email.  A total of twelve headteachers and chairs of governors responded to the request for pilot testing.

All twelve participants completed the final draft questionnaire in full and the following provides a summary of the comments received by both headteachers and chairs of governors:

* Average (mean) time of questionnaire completion was 14 minutes and 30 seconds, however median completion time was 12 minutes.
* Length of time to complete the questionnaire was felt by some as too long and for others as appropriate given the complexity of the content.
* Concern was raised as to whether the chairs would want to complete the questionnaire without conferring with their respective headteacher first.
* Questions and statements were generally deemed to be interesting, thought-provoking, clear, well-laid out and easy to follow.  However at times it was deemed challenging to ‘pin-point’ answers.
* The meaning of ‘excess weight’ and ‘junk food’ were interpreted differently and in future including a clear definition of each was proposed as being useful.
* The factual demographic question related to Ofsted rating did not include a category which was deemed appropriate for some schools, i.e. ‘yet to be inspected’.
* Difficulty was reported in completing the two ranking questions related to obesity responsibility, i.e. practical issues of selecting answers and the inability for people to equally rank particular answers.
* It was questioned whether participants, particularly chairs of governors, would know the answers to school demographic questions without checking which would be a barrier to completion for some.

Whilst no major modifications were required based on this feedback, four minor changes were implemented, 1) a definition of ‘excess weight’ and ‘junk food’ were provided in the respondent instructions, 2) an additional category was added to Ofsted rating question 3) the ranking questions were removed and replaced with revised statements and a corresponding 5-point Likert scale and 4) school demographic questions included an ‘unsure’ category in the available responses.

Although perspectives and opinions on the topic under study were obtained from the pilot test, these results were not included in the final data collected for analysis.  Given the fact that the wording, phrasing or structure of particular items within the pool differed between the pilot test and finalised questionnaire (due to the minor changes made), it wasn’t appropriate to combine the pilot test data with the main survey data.  Consequently, a new Google Form (and therefore a new web-link) was created containing the finalised online questionnaire structure and content.

**7.6 Finalised online questionnaire structure and content**

The finalised online questionnaire was structured across six distinct sections (see Appendix K).  Questions or statements related to particular themes or sub-themes were typically grouped together to enable respondents to contemplate their perceptions or opinions on one topic or issue at a time.

Section 1 –

* Section 1 provided an introduction to the survey, which included a background to the research and key information regarding voluntary participation and anonymity.  Definitions of the terms ‘excess weight’ and ‘junk food’ were provided, in addition to the researcher’s contact details.  In order to obtain informed consent (see section 7.9), this first section concluded by asking confirmation of willingness to participate.

Section 2 –

* Section 2 presented a series of factual questions related to participant demographics, i.e. their role within the school, gender, age and length of time within their respective role.  Participants were asked to respond, by selecting an answer from closed multiple-choice options, e.g. male or female, or an age within a defined age range (large enough to protect anonymity and for data analysis purposes).

Section 3 –

* Section 3 was centred on theme one of the analysed qualitative findings - perceptions of adolescent obesity and lifestyle behaviours.  Questions and statements (with corresponding 5-point Likert scales) were presented, asking for participants’ opinions regarding excess weight and related lifestyle behaviours (e.g. dietary, physical activity and sedentary behaviour) in secondary school pupils.

Section 4 –

* Section four focused on theme four of the analysed qualitative findings – secondary school setting.  Questions and statements (with corresponding 5-point Likert scales) were presented, asking for participants’ opinions regarding the role of secondary schools and headteachers/chairs of governors in adolescent obesity prevention, the existence of school-based preventative action and the perceived barriers and facilitators relating to preventing obesity in their setting.

Section 5 –

* Section five was centred on themes two and three of the analysed qualitative findings - the influence of place and shared responsibility, collective solutions.  Questions and statements (with corresponding 5-point Likert scales) were presented, asking for participants opinions regarding the role of parents and the home environment in adolescent obesity, the potential influence of the wider food environment, the allocation of responsibility for adolescent obesity prevention, the perceived effectiveness of behaviour change approaches and the importance of multi-agency partners.

Section 6 –

* The sixth and final section within the online questionnaire presented a series of factual questions regarding the participants’ school demographics, i.e. school type, free school meal percentage, pupil population and Ofsted rating.  School location even at a regional level was not obtained.  Given that there are a small number of certain school types in particular areas (e.g. Grammar and Voluntary Controlled) based on their answers to other demographic questions, i.e. pupil population, anonymity could have been compromised.

**7.7 Census survey**

As detailed in chapter five, it is important for mixed methods researchers to employ appropriate sampling procedures for each of phases of their study design.  For the first and qualitative phase of the exploratory sequential design a mixed sampling approach was utilised – stratified purposive and snowball sampling.

Typically for survey research, probability sampling is employed in order *to “make inferences about underlying populations based on sample statistics”* (Sue and Ritter, 2007, p.11), i.e. achieve generalizability (Bowling, 2014). However the survey was employed within the follow-up quantitative phase to provide additional evidence which could support the generality (and not generalizability) of the original qualitative findings.  Consequently, and as per (Morgan, 2014, p.180) for QUAL-quan priority focus mixed methods designs where the quantitative element has a supplementary purpose, there was no ambition or indeed requirement to *“produce a formal statement of statistical generalizability”*.

In addition, at the point of choosing the exploratory sequential design, it was anticipated that an extremely low response to the online questionnaire would be achieved given previous experiences of engaging with the target population both in an academic and professional capacity.  Therefore there was no expectation from the outset, that the survey results would be able to claim to be statistically representative of the population of interest.

In contrast to the qualitative phase where a sampling strategy was employed, it was decided that neither non-probability or probability sampling would be utilised.  Instead it was deemed that the most appropriate and pragmatic choice for the distribution of the survey was to conduct a census, where the entire population under study would be approached (Bryman, 2016).  This decision was based on the following factors:

* Via a Freedom of Information request (FOI) sent to the Department for Education (in January 2017), an accurate and up to spreadsheet listing all secondary schools in England was obtained, in addition to their respective generic contact email addresses
* There were challenges of recruiting potential participants in the qualitative phase and it was envisaged that by conducting a census it could maximise the reach of the questionnaire and therefore the number of responses
* Online mail merge software was identified, which would enable a personalised email along with the online questionnaire link to be sent to all secondary schools within the spreadsheet in a fast and efficient manner

Prior to commencing the data collection process and distributing the online questionnaire to potential participants, the researcher was required to review and refine the spreadsheet obtained from the Department for Education in January 2017 (via a FOI request).  As the excel spreadsheet listed all state and non-state funded schools, of all types, for pupils of all ages in England, the researcher had to perform a substantial edit in order to ensure the following schools only remained in the final database -

* State or non-state funded secondary schools in England, which provide mainstream education for pupils between the ages of 11 to 16 years, i.e. adolescents

Prior to refining the spreadsheet, a total of 24,873 schools were listed.  The following systematic process was undertaken so that schools who didn’t meet the above criteria could be sorted and removed from the spreadsheet -

* The spreadsheet was initially sorted by ‘phase of education’, with all schools listed as providing education outside of the 11 to 16 years age phase removed, i.e. nurseries, primary schools, 16 plus.
* For schools listed as ‘None Applicable’ to ensure those listed as providing education for under 11 years were removed in addition to schools who catered only for 16 years and above.
* A further sort on the basis of ‘Type of Establishment’, enabled schools to be removed who were listed as non-mainstream, i.e. special schools, secure units, pupil-referral units and alternative providers.
* Finally, the schools of participants who had taken part in either the first qualitative phase of the study or had pilot tested the questionnaire were removed due to the risk of including those who had previous exposure to the topic and lines of enquiry.

The total number of schools remaining in the spreadsheet was 4,640.  The spreadsheet was then thoroughly checked row by row to ensure each school had a corresponding email address.  Approximately 150 schools did not have an email address listed, so the researcher visited each respective school’s website to obtain a generic email address.  A total of 24 schools did not have an email address published on their website and so these schools were removed from the spreadsheet.  Consequently the final spreadsheet and therefore distribution list totalled 4,616 secondary schools in England.

7.7.1 Recruitment of potential participants

With the finalised online questionnaire and the refined contact database of potential participants, during February 2017, the researcher commenced the process of recruiting the target population to the second phase of the study.  In order to distribute the online questionnaire to the census of secondary schools in England, an online mail merge system was utilised.  At a cost of $20 USD, ‘Yet Another Mail Merge’ an add-on within Google Sheets was downloaded to facilitate the researcher’s need to distribute personalised emails to all 4,616 schools.  A generic email addressed to the school directly was created in Gmail, inviting their respective headteacher and chairs of governors to participate in the survey.  The school names and email addresses (obtained from Edubase) were inputted into Google Sheets, and the add-on then enabled the distribution of up to 1,500 emails per day (over a four day period, the entire database was therefore contacted).

Subsequent to the first recruitment drive, two further reminder emails were distributed.  For any email that ‘bounced back’, an alternative email address was sought from the school’s website and the email was then re-sent.

In a bid to increase the total number of responses obtained, additionally to emailing schools directly, the researcher approached the Association of School and College Leaders and the National Governance Association.  Each national organisation representing headteachers and chairs of governors were asked whether they would allow the request for participation in the survey to be forwarded to their members.  Both confirmed that they do not facilitate the distribution of research participation requests from external partners.  Furthermore, the researcher contacted the Times Educational Supplement, to request permission to advertise the request for survey participation on their community online forums (evidenced to be used by headteachers and chairs of governors).  Again confirmation was provided that external research requests posted to their members are not permitted.

7.7.2 Techniques to maximise response rate

The extremely low response received to the first recruitment attempt in the qualitative phase led the researcher to adopt and adapt various techniques proposed as maximising response rates to online questionnaires (Edwards et al., 2009):

Within the personalised email invitation sent:

* The word ‘survey’ was removed from the subject line and content (of both the 1st and 2nd email reminders)
* A statement was included, which thanked others for already responding (of both the 1st and 2nd email reminders)
* A defined and short deadline of two weeks to respond was included (within the 2nd email reminder)

During the process of recruiting participants, approximately ten participants after the first email request asked to be removed from the mailing list.  They were removed from the spreadsheet and were therefore not contacted with additional email reminders.  The period of data collection took place between February and April 2017, with the last email reminder requesting participation being sent on the 19th of April 2017.

**7.8 Data analysis**

Following completion of the data collection process, the researcher approached the task of checking, managing and analysing the quantitative data obtained.

*Data checking, management and analysing*

A variety of steps were undertaken to ensure the data obtained from the data collection tool was appropriately prepared for data analysis.  This included checking, coding and transforming the whole data set.  The use of Google Forms as the means for distributing and collecting responses to the online questionnaire, enabled resultant data to be downloaded into an excel spreadsheet.  At this point the data was preliminarily checked for its completeness, i.e. whether any missing or incomplete responses had been obtained.  It was established that all 127 responses had been completed in their entirety and the data was subsequently downloaded into IBM SPSS Statistics (IBM Corp, 2016), a software package used for undertaking descriptive and inferential statistical analysis.  The quantitative data set was managed within SPSS Statistics in order to ensure accuracy and consistency in how the data was analysed and presented.  Furthermore, its use enabled both descriptive and inferential statistics to be obtained and reported upon.

Prior to performing statistical analysis, the researcher went about re-coding specific data in order to meet the formatting requirements of SPSS.  Within the data set, different types of variables were generated including nominal (i.e. gender or school type), ordinal (i.e. agree or disagree) and interval (i.e. categories of age or free school meal percentage).  In order for the SPSS to perform the required statistical tests and with guidance from a Statistician, each variable and corresponding data was checked and where required re-coded as follows:

* All Likert scale responses were given a single corresponding numerical value (i.e. Strongly disagree = 1, disagree = 2, neither agree or disagree = 3, agree = 4 and strongly agree = 5)
* All interval variables were recoded to remove any unanalysable letters or symbols (e.g. % or -) and all were given single corresponding numerical values (i.e. 0-250 pupils = 1, 251-500 pupils = 2 etc or 0-10% free school meals = 1, 21-20% free school meals = 2 etc).
* Due to the small sample size the nominal variable of school types was reduced to a dichotomous variable (i.e. state or non-state funded school)
* Where participants had selected ‘Unsure’ for questions regarding school demographics, these responses were recoded as missing in SPSS

7.8.1 Descriptive and inferential statistics

Having checked the data, entered it into SPSS and undertaken the required recoding of variables, the researcher utilised this software to generate descriptive statistics.  Descriptive statistics are *“those that summarize patterns in the responses of cases in a sample”* (De Vaus, 2002, p.207) and are often presented in tables and graphs (Teddlie and Tashakkori, 2009).  In this study, frequencies and percentages generated via SPSS were utilised to describe the demographics of participants, the schools participants represented and the responses received to each question within the data collection tool.  Within chapter eight, descriptive statistics, i.e. frequencies and percentages are reported within summary tables (for participant and school demographics) and displayed as stacked bar charts (for responses to the remaining questionnaire content).

Following the descriptive statistics being obtained, bivariate analysis was employed to investigate differences between and among groups (de Vaus, 2002; Field, 2009; Bryman, 2016). Driven by the analysed qualitative findings, the researcher was particularly interested in examining whether statistically significant associations and correlations existed between key independent variables (i.e. participant role type, school type, gender, pupil disadvantage and pupil population) and the dependent variables (i.e. responses to questions or opinion statements).  In order to do this, three non-parametric statistical tests conducted within SPSS were utilised - Mann-Whitney U test, Chi-squared test and Spearman’s correlation coefficient.

Debate exists regarding whether responses to Likert scales can be treated as interval instead of ordinal data enabling parametric tests to be undertaken (De Winter and Dodou, 2010). However the decision to employ non-parametric tests as opposed to parametric tests was based on the small sample size obtained, the majority of the data being categorical in nature (nominal or ordinal), and the inability to assume the population would be normally distributed (a requirement for conducting parametric tests), (Pallant, 2010).  The purpose of conducting the non-parametric tests was in recognition of the desire to address the following three questions:

1. Are there any statistically significant associations between the independent variables of participant role type, school type, gender and responses to questions posed within sections two to five of the questionnaire? I.e. Do certain groups more strongly agree with the statements provided than others?
2. For one question where a nominal scale instead of an ordinal scale is used, is there a statistically significant difference in the proportions of school types answering ‘Yes’ or ‘No’ to each statement or in the proportions of role types answering either ‘Unsure’ or ‘Yes’ and ‘No’.  I.e. Are certain groups more likely to give a certain answer than others?
3. Is there a statistically significant correlation between the independent variables of pupil disadvantage and pupil population and the proportions of responses to each question within sections two to five of the questionnaire?

In order to answer the first question, Mann-Whitney U tests were conducted, a non-parametric test, which enables differences between two independent samples to be examined, i.e. whether the ‘mean rank’ of responses for a particular statement were the same or higher for an independent and dichotomous variable of interest.  For example, does one group (i.e. headteachers or chairs of governors) more strongly agree at a statistically significant level with a particular statement?

The second question was addressed through use of a Chi-squared test for independence, which allows the relationship between two categorical and in this case two nominal variables to be examined (Bryman, 2016).  Chi-squared compares the observed frequencies of cases that happen in each category (i.e. school type), with values that would be expected if there was no association between the two variables measured, i.e. school type and provision of extra-curricular physical activity opportunities (Pallant, 2010).

As two of the independent variables of interest (i.e. pupil disadvantage and pupil population) were interval as opposed to nominal variables, it was not possible to conduct Mann-Whitney U or Chi-squared tests.  Consequently, the third question was addressed through performing Spearman’s correlation coefficient, a test which measures the strength and direction of correlation between two ordinal variables or when one is variable is ordinal and the other is interval (Bryman, 2016). Results from Spearman’s correlation coefficient tests were interpreted as follows (Cohen, 1992):

* -0.3 to +0.3 weak correlation
* -0.5 to -0.3 or 0.3 to 0.5 moderate correlation
* -0.9 to -0.5 or 0.5 to 0.9 strong correlation
* -1.0 to -0.9 or 0.9 to 1.0 very strong correlation

For all three non-parametric tests, results were interpreted as statistically significant when a p value was identified as < 0.05.

7.8.2 Open question analysis

In addition to the demographic questions and closed opinion statements posed, participants were provided with four open free text questions.  Given the qualitative nature of the data obtained from these questions, it was not appropriate to utilise the same quantitative analytical methods employed for the closed questions and opinion statements.  The four questions were as follows:

1. *‘What other approaches to preventing excess weight gain in secondary school pupils are or could be effective?’*
2. *‘Please describe any other barriers to your school for preventing excess weight gain in secondary school pupils’*
3. *‘Please describe any other facilitators that would help your school to prevent excess weight gain in secondary school pupils’*
4. *“Please provide any further comments you have about the prevention of excess weight gain in secondary schools”*

Whereas the fourth question enabled participants to submit any further comments they may have related to the topic under study, the first three directly corresponded to a set of closed opinion statements.  This fact coupled with the limited number of responses obtained for each open question (as described in chapter eight), meant undertaking a thematic analysis similar to that conducted in the qualitative phase was deemed both unnecessary and inappropriate.  Instead, the responses and resultant qualitative data was collated, reflected upon and summarised for each respective question.  Despite not a formal analysis, this process still allowed scope for discovery of diverse perspectives (Gillham, 2000).

**7.9 Ethical approach and procedures**

As detailed in chapter five, a robust ethical approach and related procedures guided by key principles, were adhered to throughout both phases of the research project (Snape and Spencer, 2003; Ritchie et al., 2014; Bryman, 2016). Relevant to both phases was the researcher’s compliance to the University of Sheffield’s ‘Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue: Version 6’.  In addition, ethical approval had been obtained from the ScHARR Research Ethics Committee (SREC) in December 2015 to undertake the both phases of the research study (number 006808 – Appendix H).

In order to meet the requirements stipulated in this ethics approval, prior to collecting data in the quantitative phase, the researcher submitted an ethics amendment to the Chair of the SREC in November 2016.  The amendment detailed the finalised quantitative phase research aim and objectives, the specific methods proposed for approaching and recruiting participants and a copy of the questionnaire.  Approval for this amendment was received in November 2016 (number 006808 – Appendix H)

In relation to the ethical procedures adopted specifically within the quantitative phase, the same key ethical principles, which were presented in the chapter five were adhered to. Table 7.2 identifies how these ethical principles were addressed and adhered to within the quantitative phase.

Table 7.2 - Ethical Principles and how these were addressed in quantitative phase of the study

|  |  |
| --- | --- |
| Research should be worthwhile and should not make unreasonable demands on participants | Firstly, it was established during the process of confirmation review (PhD upgrade) and obtaining ethics approval that the research was worthwhile and of some value given its potential for contributing to a valuable evidence base.  Secondly, during the process of ethical approval and subsequent approval of an ethical amendment, the quantitative phase and proposed methodology was viewed to not make unreasonable demands on participants.  Lastly, on the final page of the completed online questionnaire, participants were sincerely thanked for participating in the research. |
| Participation in research should be based on informed consent | Once a potential participant access the questionnaire link, they were asked to read participant information.  This section of the questionnaire consisted of:   * An overview of the proposed research * What participation in the questionnaire involves * An explanation about voluntary participation and the right to withdraw at any point, without consequence * The data management procedures * The researchers contact email address   After the participant information was presented, the first question posed to participants asked people to answer ‘yes’ or ‘no’ to the following statement – ‘I have read and understood the above information and want to participate’.  The questionnaire was designed so that participants were not able to proceed without selecting one of these options.  This was due to the wanting to minimise gaps or errors in the data in order to enhance data analysis.  However, it was made clear at the beginning of the online questionnaire that participation in the research, i.e. by completing the questionnaire was entirely voluntary and in no way compulsory. |
| Participation should be voluntary and free from coercion or pressure | Within the participant information provided at the start of the questionnaire, it was explicitly stated that if participants agreed to take part they would be doing so on an entirely voluntary basis, and consent to participate could be retracted at any point.  This approach similarly to the qualitative procedures, hereby aimed to respect the fact that consent is dynamic in nature and a continual and evolving process rather than a single action (Pope and Mays, 2006).  No incentive was offered for participants to take part in the study.  In addition, whilst an explanation of the potential benefits of participation (related to the future impact of the research) were provided, in accordance with best practice (Ritchie et al, 2014), caution was used to not over claim the potential benefits and thereby indirectly pressure agreement to participate. |
| Adverse consequences of participation should be avoided and risks of harm known | Potential adverse consequences or risks were assessed and outlined within the ethics application to the ScHARR Ethics Committee.  It was anticipated that minimal (if any) harm would result from completing the online questionnaire.  The only potential and minor issues proposed were:   * The time demands on participants to complete the online questionnaire (estimated to be up to 15 minutes) * Participants may feel uncomfortable about sharing or answering certain questions related to their views or experiences * Participants may feel concerned about the use of personal data, i.e. providing personal or school demographics   To address these issues, participants were assured that they were free to withdraw participation at any point without penalty or consequence.  Furthermore, within the first section of the questionnaire participants were provided with information about how the researcher would assure confidentiality and anonymity. |
| Confidentiality and anonymity should be respected | Information about the security and non-disclosure of personal or identifying data was given to participants in the information provided in the first section of the questionnaire.  This included information regarding the fact that personal details would not be obtained or therefore shared with others and any verbatim quotations used for publication would be anonymised.  The IP addresses of participants were not collected.    Access to the data was restricted to the researcher and academic supervisors.  Although direct quotations from respondents may be published in reporting the findings of this study, these will be anonymised and care will be taken to ensure that identification of individuals is not possible. |

**Chapter 8**

**Quantitative results**

**8.1 Introduction**

This chapter presents the analysed results of the descriptive cross-sectional survey and is organised into two overarching sections.  As with the qualitative findings presented in chapter six, the results from this quantitative phase of the research are reported across without theoretical discussion or connection to the relevant literature.

After reporting the survey response rate, the first section of this chapter provides the characteristics of the sample, both relating to participant and their respective school demographics.  Descriptive statistics (i.e. frequencies and percentages), derived from analysis in statistical software SPSS, are used to summarise the sample characteristics, and are presented within summary tables and an accompanying narrative.

The second overarching section of this chapter moves on to reporting summarised participant responses to the questions posed within the data collection tool.  Stacked bar charts are employed within this section to display the relevant descriptive statistics (i.e. response percentages), in a visually engaging format.  Furthermore, for each question, results from conducting various non-parametric statistical tests, which examined associations and correlations between variables of interest (i.e. Mann-Whitney U, Chi-squared and Spearman’s correlation coefficient) are reported.  Where an open question accompanied a specific Likert-scale (three in total), free text responses are summarised in table form.  Finally, section two of the chapter concludes by providing a brief account of participant’s further comments relating to the topic under study.

**Section 1**

**8.2 - Response rate**

In total 4,616 secondary schools in England were contacted via email to ask for their respective headteacher and chair of governors participation in the survey.  The first original request for participation was emailed during February 2017, and two subsequent reminder emails were sent during March and April 2017.  A total of 127 responses were obtained (excluding the pilot responses), with all completing the online questionnaire in full. No missing or incomplete responses were identified.  The number of complete responses received resulted in a response rate of 2.8%.

Whilst the response rate is extremely low, as highlighted previously in chapter 7, it was entirely anticipated given the researcher’s previous challenges in engaging the study population. Furthermore, as discussed, the purpose of the survey was not to achieve a representative sample in which to generalise results.  The survey was employed to provide additional evidence to supplement and enhance the findings from the main qualitative phase, enabling an enriched data set for interpretation at the point of discussion.

**8.3 - Characteristics of the sample**

8.3.1 Participant demographics

Table 8.1, presents a summary of participant demographics, providing both the frequency (n = actual number of participant responses) and the relative proportions (% = percentage) of responses received for each question.  Demographic information related to gender, age and length of service in role are presented specifically for each participant role type, i.e. headteacher and chair of governors.

The majority (70.9%) of the 127 survey respondents identified themselves as a secondary school headteacher (H), with chairs of governors (CG) therefore forming just under a third (29.1%) of total participation.  Within the final sample, 50.4% of participants were male and 49.6% female.  Of the 126 respondents who reported their age (one preferred not to say), 80.4% were aged between 41-60 years, with 51-60 years yielding the largest proportion of responses for both role types (H = 53.3% and CG = 43.2%).  The range of age categories differed between the role types, with most headteachers selecting between 31 to 70 years and most chairs of governors selecting between 41 to 80 years.

Almost two thirds (64.6%) of participants at the point of completing the questionnaire had been within their respective role for between one and ten years.  For both role types, the length of service category with the largest proportion of responses received was 1-5 years (H = 37.8% and CG = 43.2%).

Table 8.1 - Participants demographics of final sample

|  |  |  |  |
| --- | --- | --- | --- |
| **Participant characteristic** | **All participants**  **(n = 127)**  **n (%)** | **Headteachers**  **(n = 90)**  **n (%)** | **Chair of governors**  **(n=37 )**  **n (%)** |
| **Gender**  Male  Female | 64 (50.3)  63 (49.6) | 43 (47.8)  47 (42.2) | 21 (56.8)  16 (43.2) |
| **Age (in years)**  21-30  31-40  41-50  51-60  61-70  71-80  81+  Prefer not to say | -  9 (7.1)  38 (29.9)  64 (50.4)  10 (7.9)  5 (3.9)  -  1 (0.8) | -  9 (10)  30 (33.3)  48 (53.3)  2 (2.2)  -  -  1 (1.1) | -  -  8 (21.6)  16 (43.2)  8 (21.6)  5 (13.5)  -  - |
| **Length of time in role (in years)**  Less than 1  1-5  6-10  11-15  16-20  21-25  26+  Prefer not to say | 15 (11.8)  50 (39.4)  32 (25.2)  11 (8.7)  11 (8.7)  4 (3.1)  3 (2.4)  1 (0.8) | 11 (12.2)  34 (37.8)  22 (24.4)  9 (10)  10 (11.1)  2 (2.2)  1 (1.1)  1 (1.1) | 4 (10.8)  16 (43.2)  10 (27)  2 (5.4)  1 (2.7)  2 (5.4)  2 (5.4)  - |

Whilst it is not possible to access national statistics on the demographics of chairs of governors, the Department for Education (DfE), publishes a yearly census of the workforce in English state funded schools.  The most recent release (DfE, 2016), identified that the gender split of headteachers within state-funded secondary schools was 61% males and 39% females.  In respect to headteachers from state-funded secondary schools in the final sample (n=71), a greater proportion were female (55%) than male (45%).  This suggests that females were overrepresented in the sample.

8.3.2 - Demographics of the participants’ schools

Participants were posed a range of questions related to the characteristics of the school they were either employed at or elected to.  As detailed in the last section of the questionnaire, the questions focused on school types, percentage of pupils receiving free school meals (both currently and in the previous six years), Ofsted performance rating and school pupil population.  Table 8.2 presents a summary of the responses received to these questions and as in table 8.1, descriptive statistics are provided for both frequency (n = actual number of participant responses) and the relative proportions (% = percentage) of responses received for each question.

In total, 84.3% of participants in the final sample reported to represent a state funded secondary school (i.e. academy, community or foundation school).  The remaining 15.7% of survey respondents reported their school type as independent, i.e. non-state funded school.  Only 21% of headteachers and 2.7% of chairs of governors who participated were from non-state funded schools.

Of the participants from state-funded secondary schools (n=107), 60.8% selected ‘Academy’ as their school’s type, with ‘Community’ being the second highest school type represented (17.8%).  When comparing this to the national profile of school types, academy schools (converter mainstream and sponsor-led) made up 58.6% of all state-funded secondary schools in England (Department for Education, 2016b).  This indicates that for participants who were representing state funded secondary schools (84.3%), the ratio of academy and non-academy school types (nearly 2:1) was close to the national picture.

Used as a proxy for pupil disadvantage, two questions were posed regarding the free school meal percentages of participant’s schools.  In total, aside from those who selected ‘Unsure’ (10%), 44.1% of remaining participants represented schools where the percentage of pupils currently receiving free school meals was under 15%.  The vast majority (94.4%) of the 18 non-state funded schools represented had a free school meal percentage of below 15%, in comparison to 39.4% of state funded schools.  Over half (55.9%) of participants were either employed or elected at schools with a current free school meal percentage of 16% or above, the vast majority (98.4%) of which were state-funded schools.   In January 2016, the Department for Education reported that 13.2% of state funded secondary school pupils were eligible for and claiming free school meals, which indicates that schools represented within the final sample had a broadly higher free school meal percentage than the national picture.

The second question related to pupil eligibility for free school meals in the previous six years (Ever 6 FSM pupils), a measure used for determining a school’s allocation of pupil premium funding.  Compared to the previous question, a higher percentage of participants (15%) chose ‘Unsure’ as their answer.  Of those who responded the largest proportion (24.4%) of responses were identified within the 0-10% category (of which 54.8% were from non-state funded schools).  However, when school type is considered, 94.4% of non-state funded schools had an Ever 6 FSM pupil percentage of 0-10% compared to 15% of state funded schools.  The category chosen most frequently by state-funded schools was 21-30%.  It was not possible to identify publically accessible information regarding the secondary school percentage average of Ever 6 FSM.

Nearly half of respondents (49.6%) reported that their school had a current Ofsted performance rating of ‘Good’ and just under a third (29.1%) selected ‘Outstanding’ as their school’s rating.  The categories of ‘Requires Improvement’ and ‘Inadequate’ were represented by 12.6% and 2.4% or participants respectively.  The remaining participants were either awaiting an Ofsted inspection (5.5%) or in the case of one participant (0.8%) unsure of their current rating.

The only publically available information on Ofsted performance ratings across England, is based on state-funded schools only.  Consequently, when non-state funded schools are removed from the final sample, aside from two schools, which were ‘Yet to be inspected’ the following Ofsted performance ratings were identified - ‘Outstanding’ - 28.6%, ‘Good’ - 54.3%, ‘Requires improvement’ - 14.3% and ‘Inadequate’ - 2.8%.  When compared to the national picture, as of December 2016, 23% of state-funded secondary schools in England were rated as ‘Outstanding’, 56% as ‘Good’, 16% as ‘Requires improvement’ and 5% as ‘Inadequate’ (Ofsted, 2017).  This indicates that the final sub-sample of state-funded secondary schools were overrepresented by ‘Outstanding’ schools and marginally underrepresented by the other three categories.

In regards to the pupil population of the schools represented, the largest number of responses were attributed to pupil numbers of between 501-1,000 (37.8%) and 1001-1,500 (36.2%).  The DfE reports that the average size of a state funded secondary school in England is 939 pupils (DfE, 2016).  The vast majority (80%) of participants from non-state funded secondary schools (n=20) had 500 pupils or less attending their schools.

Table 8.2 - School demographics represented by participants

|  |  |  |
| --- | --- | --- |
| **School characteristic** | **Number of responses**  **Total = 127**  **n** | **Percentage**  **%** |
| **School type**  Academy  Community  Foundation  Free  Grammar  Independent  Voluntary aided  Voluntary controlled  Other | 65  19  10  3  7  20  3  -  - | 51.2  15  7.9  2.4  5.5  15.7  2.4  -  - |
| **Percentage of pupils currently receiving free school meals (FSM)**  0-5  6-10  11-15  16-20  21-25  26-30  31-35  36-40  41-45  46-50  51+  Unsure | 25  20  11  17  12  10  10  3  2  2  5  10 | 19.7  15.7  8.7  13.4  9.4  7.9  7.9  2.4  1.6  1.6  3.9  7.9 |
| **Percentage of pupils eligible for free school meals (FSM) at any time during the past 6 years -**  0-10  11-20  21-30  31-40  41-50  51+  Unsure | 31  20  27  14  5  11  19 | 24.4  15.7  21.3  11  3.9  8.7  15 |
| **Most recent Ofsted rating**  1 - Outstanding  2 - Good  3 - Requires improvement  4 - Inadequate  Yet to be inspected  Unsure | 37  63  16  3  7  1 | 29.1  49.6  12.6  2.4  5.5  0.8 |
| **Number of pupils attending the school**  0-250  251-500  501-1000  1001-1500  1501-2000  2000+ | 17  10  48  4  6  - | 13.4  7.9  37.8  36.2  4.7  - |

**Section 2**

**8.4 Descriptive and inferential statistics**

The second section of this quantitative results chapter presents the responses to questions and opinion statements, which were derived from the four themes of the qualitative findings –

* Perceptions of adolescent obesity and lifestyle behaviours
* Influence of place
* Shared responsibility, collective solutions
* Secondary school setting

The resultant outcomes of this analysis for each individual questionnaire and opinion statement and relevant to their respective qualitative theme are reported.

The summarised responses (presented as proportions i.e. percentages) are displayed visually in stacked bar charts, in order to be able to simply and quickly identify key features, patterns and trends in the data.  An accompanying narrative, highlights key features of the results obtained.  Furthermore, outcomes of conducting the chosen non-parametric statistical tests are reported.

For each question posed, the researcher was interested in identifying the existence of associations or correlations between the responses received and the independent variables of –

* Participant role type
* School type
* Participant gender
* School pupil disadvantage (based on two questions related to free school meal percentages)
* School pupil population

To address this and as discussed in chapter seven, dependent on the type of data each question collected (i.e. nominal or ordinal), the researcher employed three different non-parametric tests. Results were interpreted as statistically significant for all three non-parametric tests when a p value was identified as < 0.05.  Only statistically significant results are described in the below section, however Appendix L details resultant values of Spearman's correlation coefficient tests, in addition to the p values for all statistical tests conducted.

8.4.1 Perceptions of adolescent obesity and lifestyle behaviours

As presented in figure 8.1, whilst just over half of participants (52%) either agreed or strongly agreed with the statement that ‘I am concerned about levels of excess weight’, a much greater majority (85.8%) either agreed or strongly agreed with the statement ‘I am concerned about unhealthy dietary habits’.  Similarly, in comparison to the concern regarding excess weight, again a larger proportion of participants agreed or strongly that they were concerned about levels of sedentary behaviour (71.6%).  Nearly two thirds of participants (65.4%), agreed or strongly agreed that unhealthy dietary habits were of greater concern to them than levels of excess weight.  In comparison, a smaller proportion (44.9%) of participants agreed or strongly agreed that sedentary behaviour was a greater concern than levels of excess weight.

Results from a series of Mann-Whitney U tests indicated that out of the five statements listed in figure 8.1, there was a statistically significant difference between headteachers and chairs of governors in terms of strength of agreement to the following two statements: 1) ‘I am concerned about unhealthy dietary habits’ (p = 0.01) and 2) ‘Unhealthy dietary habits are a greater concern to me than levels of excess weight’ (p=0.03).  Headteachers agreed more strongly with both statements compared to chairs of governors.  There was however no statistically significant difference between role types for the remaining three statements or when school type or gender were tested as the independent variable.

Spearman’s Correlation Coefficient was conducted to measure the strength and direction of association between the statements presented in figure 8.1 and pupil population and pupil disadvantage.  Two school demographic questions were utilised as a proxy for measuring pupil disadvantage (as per the Department of Education) - % of pupils currently receiving free school meals (Q1) and % of pupils who have been eligible at any time for free school meals in the last six years (Q2).  Results indicated a moderate positive correlation between pupil disadvantage and the concern about levels of excess weight in secondary school pupils (Q1 - r = .329, p = 0.01/ Q2 - r = .337, p = 0.00) and unhealthy dietary habits (Q2 - r = .309, p = 0.01), i.e. the higher the disadvantage reported, the stronger the concern indicated.  A weak yet statistically significant positive correlation existed between pupil disadvantage and the concern regarding levels of sedentary behaviour (Q1 - r = .244, p = 0.02/ Q2 - r = .211, p = 0.02).  There was no statistically significant correlation evidenced between school pupil population and the statements presented in the below figure.

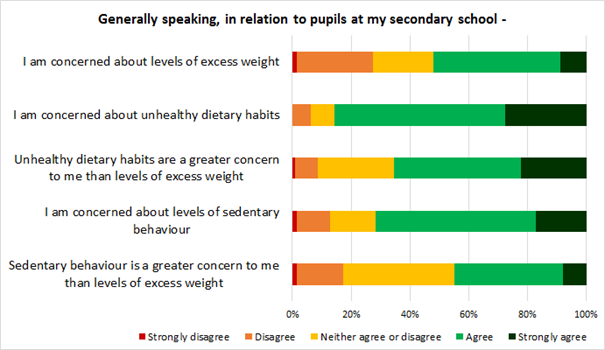


Figure 8.1 – Responses to questions presented in section three of the questionnaire (Q1)

Figure 8.2, displays participants responses to the question ‘What percentage of pupils at your secondary school do you estimate to be of excess weight, i.e. overweight or obese?’.  In total 46.5% of participants answered 0-10%, 29.1% answered 11-20% and 11.8% answered 21-30%.  Collectively, this means that the vast majority of participants (87.4%) deem excess weight prevalence in their secondary school pupil population to be less than a third.

Results from conducting Mann-Whitney U tests did not identify a relationship between estimated prevalence of excess weight and either participant role type (p = 0.89) or school type (p = 0.07).  There was however a statistically significant difference in how males and females estimated the prevalence of excess weight in their secondary school pupils (p = 0.007), with male participants approximating a higher percentage value than female participants.

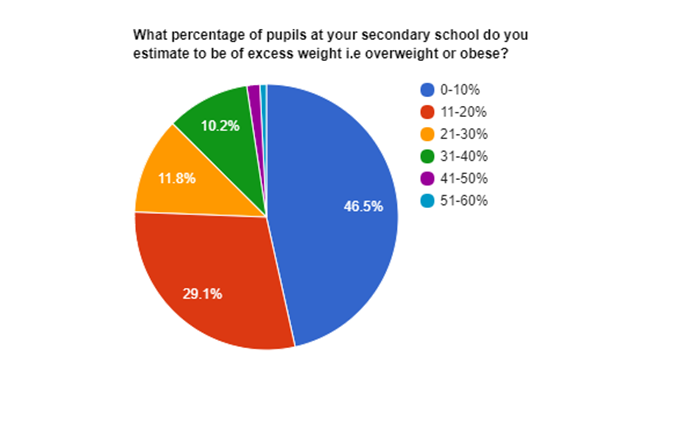


Figure 8.2 – Responses to questions presented in section three of the questionnaire (Q2)

Results from conducting Spearman’s correlation coefficient tests indicated a weak yet statistically significant association between pupil disadvantage and estimated prevalence of excess weight in secondary school pupils (Q1 - r = .270, p = 0.005/ Q2 - r = .280, p = 0.002).  There was no statistically significant correlation evidenced between school pupil population and the above question.

Displayed in figure 8.3, is the level of agreement participants attributed to whether visual assessment is an accurate method to identify excess weight in secondary school pupils.  More survey respondents disagreed or strongly disagreed (44.1%) to this particular statement than agreed or strongly agreed (37%), and just under a fifth of participants (18.9%) remained neutral.

Results from employing Mann-Whitney U tests, indicated that there was no statistically significant difference between the independent variables of role type (p = 0.51), school type (p = 0.90) or gender (p = 0.79) and resultant strength of agreement to the statement displayed in figure 8.3.

Results from conducting Spearman’s correlation coefficient tests indicated no statistically significant correlation between either pupil disadvantage, school pupil population and the responses to the below statement.

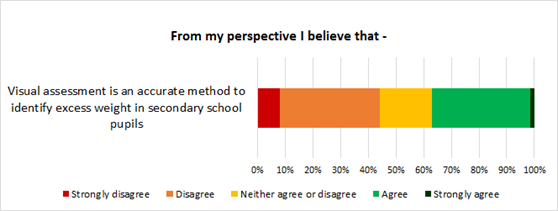


Figure 8.3 – Responses to questions presented in section three of the questionnaire (Q3)

Figure 8.4 below, displays summarised responses to five statements relating to dietary, physical activity and sedentary behaviour of secondary school pupils.  Regarding dietary behaviours, just over two thirds of participants (66.7%) agreed or strongly agreed that secondary school pupils consume too much junk food.  Approximately a half (51.2%) disagreed or strongly disagreed that secondary school pupils eat a healthy breakfast and the majority (73.2%) agreed or strongly agreed that too many sugary drinks are consumed.  Over a third of participants (41%) disagreed or strongly disagreed that secondary school pupils undertake enough physical activity and a marginal majority (54.3%) agreed or strongly secondary school pupils spend too long being sedentary.

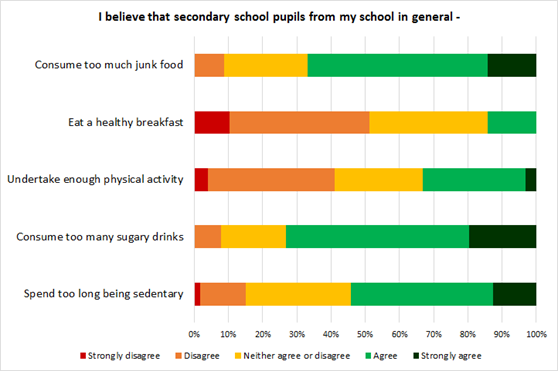


Figure 8.4 – Responses to questions presented in section three of the questionnaire (Q4)

Results from Mann-Whitney U tests undertaken, indicated that in the case of role type, apart from statement three (‘Undertake enough physical activity’), there was a statistically significant difference in the strength of agreement between headteachers and chairs of governors on the remaining four statements (Appendix L for p values).  Headteachers more strongly agreed that secondary school pupils - ‘Consume too much junk food’ (p = 0.05), ‘Consume too many sugary drinks’ (p = 0.01) and ‘Spend too long being sedentary’ (p = 0.03). Headteachers also more strongly disagreed that secondary school pupils - ‘Eat a healthy breakfast’ (p = 0.02).

In relation to school type, results from Mann-Whitney U tests indicated that there was a statistically significant difference in strength of agreement between state and non-state funded schools for two statements displayed in figure 8.4.  State-funded schools disagreed more strongly that secondary school pupils ‘Eat a healthy breakfast’ (p = 0.02) and ‘Undertake enough physical activity’ (p = 0.001).  There wasn’t a statistically significant difference regarding strength of agreement between the above five statements and gender of participants.

Results from conducting Spearman’s correlation coefficient tests indicated a moderate positive correlation between pupil disadvantage and the following statement - ‘Consume too much junk food’ (Q1 - r = .313, p = 0.001/ Q2 - r = .368, p = 0.00).  A moderate negative correlation between pupil disadvantage and the following statements was identified - ‘Eat a healthy breakfast’ (Q1 - r = -.373, p = 0.00/ Q2 - r = -.385, p = 0.00) and ‘Undertake enough physical activity’ (Q1 - r = -.309, p = 0.001/ Q2 - r = -.323, p = 0.00).  A weak yet statistically significant correlation was evidenced for pupil disadvantage and the opinion that secondary school pupils ‘Spend too long being sedentary’ (Q1 - r = .235, p = 0.01/ Q2 - r = .245, p = 0.008).  There was no statistically significant correlation evidenced between school pupil population and the above statements.

The last figure related to the theme of perceptions of adolescent obesity and lifestyle behaviours, displays summarised responses to statements regarding pupils in receipt of free school meals.  In the case of each statement the largest proportion of responses was attributed to the neutral position, i.e. Neither agree or disagree.  Compared to statements below regarding excess weight and physical activity, there was greater agreement by participants (37.8%) that pupils who receive free school meals (compared to those who don’t) ‘have unhealthier dietary habits’.  Just over a fifth (21.3%) agreed or strongly agreed that free school meal pupils are more likely to be of excess weight and 18.1% agreed or strongly agreed that they do less physical activity.

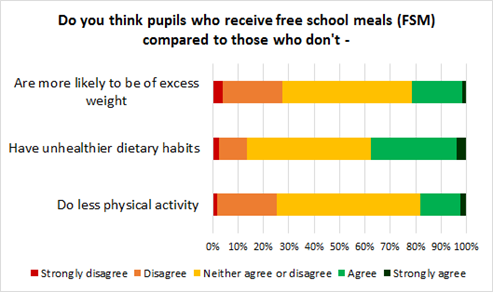


Figure 8.5 – Responses to questions presented in section three of the questionnaire (Q5)

Results from conducting Mann-Whitney U tests, evidenced that there was no statistically significant difference between role types, school types and the strength of agreement with the above three statements (Appendix L for p values).  However, there was a statistically significant difference identified between genders and the strength of agreement, for two of the above statements. Males agreed more strongly that pupils who receive free school meals compared to those who don’t - ‘Are more likely to be of excess weight’ (p = 0.006) and ‘Do less physical activity’ (p = 0.003).  Having conducted Spearman’s correlation coefficient, no statistically significant correlation was evidenced between pupil disadvantage, school pupil population and the above statements.

8.4.2 Influence of place

Two overarching questions were derived from the second theme within the qualitative findings, each presenting a range of statements related to the influence of place on adolescent obesity, lifestyle behaviours and obesity prevention (see figure 8.6).

A significant majority of participants agreed or strongly agreed with the first two statements presented in figure 8.6 (88.2% and 82.6% respectively).  In comparison, a more even distribution of responses are evident in the four remaining statements, in addition to a larger proportion of participants opting for a neutral position (i.e. neither agree or disagree).  The statement below with the largest proportion of participant disagreement (40.9% disagreed or strongly disagreed) centred on - ‘Parents have the required knowledge to prevent excess weight gain in children’.

Following a series of Mann-Whitney U tests being conducted it was identified that there was no statistically significant difference between role types, school types or gender and the strength of agreement with each of the five statements displayed in the figure above (Appendix L for p values).

Results from conducting Spearman’s correlation coefficient tests indicated a weak yet statistically significant negative correlation between the following two statements and one measure of pupil disadvantage - ‘Parents have the required knowledge to prevent excess weight gain in their children’ (Q2 - r = -.185, p = 0.04) and ‘Parents are aware of the risks of excess weight gain in secondary school pupils’ (Q2 - r = -.189, p = 0.04).  There was no statistically significant correlation evidenced between school pupil population and statements within this question.

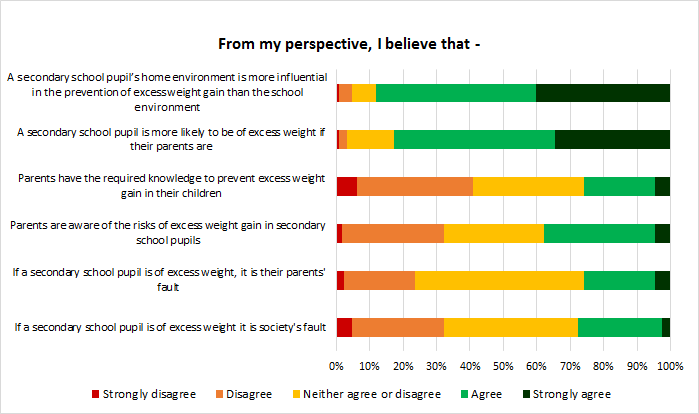


Figure 8.6 – Responses to questions presented in section five of the questionnaire (Q1)

Summarised responses to opinion statements regarding the wider food environment are presented in the next figure 8.7 below.  A significant majority of participants were concerned about the marketing of junk food to children and young people (88.2% agreed or strongly agreed) and believed that the food industry prioritises profits over the health of children and young people (83.5% agreed or strongly agreed).  Just under two thirds of survey respondents (62.2% agreed or strongly agreed) believed that unhealthy eating is associated with poverty, almost a half (47.2% agreed or strongly agreed) indicated concern about the availability of junk food near to their secondary school.

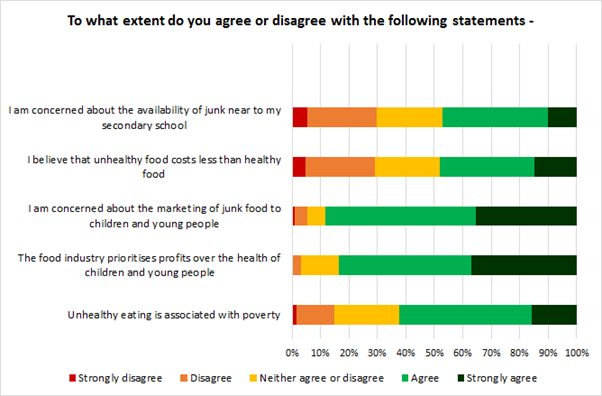


Figure 8.7 – Responses to questions presented in section five of the questionnaire (Q2)

Results from conducting Mann-Whitney U tests indicated that there was no statistically significant difference between role types or gender and the strength of agreement with the statements presented in figure 8.7 (Appendix L for p values).  Furthermore, whilst four of the above five statements did not evidence a statistically significant difference between school types, participants from state funded schools in comparison to those from non-state funded schools more strongly agreed (at a statistically significant level - P = 0.02) with the statement ‘Unhealthy eating is associated with poverty’.

Following Spearman’s correlation coefficient tests being undertaken, results indicated a weak positive correlation between the following statements and both measures of pupil disadvantage - ‘I am concerned about the availability of junk food near to my secondary school’ (Q1 - r = .234, p = 0.001/ Q2 - r = .252, p = 0.006).  There was a weak positive correlation between ‘Unhealthy eating is associated with poverty’ and one measure of pupil disadvantage (Q1 - r = .231, p = 0.001) There was no statistically significant correlation evidenced between school pupil population and statements within this question.

8.4.3 Shared responsibility, collective solutions

Figure 8.8 relates to the qualitative theme of ‘Shared responsibility, collective solutions’ and displays participants’ opinions regarding who has responsibility for preventing excess weight gain in secondary school pupils.  For each category presented in figure 8.8, i.e. parents or government, the majority of participants agreed or strongly agreed that all have a responsibility for excess weight prevention.  The three responses with the largest proportion of agreement were - parents (99.2% agreed or strongly agreed), secondary school pupils themselves (97.6% agreed or strongly agreed) and the food industry (92.9% agreed or strongly agreed).  Whilst the majority of participants did agree or strongly agree that secondary schools (80.3%) and primary schools (82.7%) have a responsibility, the largest proportion of disagreement can be attributed to these two categories (8.6% and 7.9% respectively disagreed or strongly disagreed).

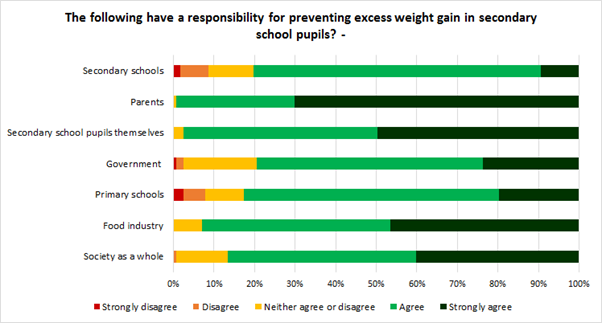


Figure 8.8 – Responses to questions presented in section five of the questionnaire (Q3)

Mann-Whitney U tests were conducted to identify statistically significant differences in the strength of agreement with each statement for different groups (i.e. role types, school types and genders).  There were two statistically significant differences: 1) Headteachers agreed more strongly that parents have a responsibility (P = 0.01) and 2) Participants from non-state funded secondary schools agreed more strongly that secondary school pupils themselves have a responsibility.

Following Spearman’s correlation coefficient tests being conducted, only one indicated a statistically significant result.  A weak negative correlation existed between the perceptions of secondary school pupils having responsibility themselves for preventing excess weight and a school’s pupil population, i.e. the smaller the school pupil population, the stronger the agreement with the statement.

As presented in figure 8.9 below, participants opinions were sought regarding which approaches to excess weight prevention in secondary school pupils are effective.  The top three approaches with the largest proportion of agreement, were - ‘Providing opportunities to be active (98.4% agreed or strongly agreed), ‘Providing opportunities to develop healthy eating habits’ (96.8% agreed or strongly agreed) and ‘National public awareness campaigns’ (88.9% agreed or strongly agreed).  Whilst the majority of participants agreed or strongly agreed that taxation (66.2%) and legislation (73.2%) are effective, these statements also received the largest proportion of disagreement compared to other approaches listed (taxation - 16.5% disagreed or strongly disagreed and legislation - 13.4% disagreed or strongly disagreed).

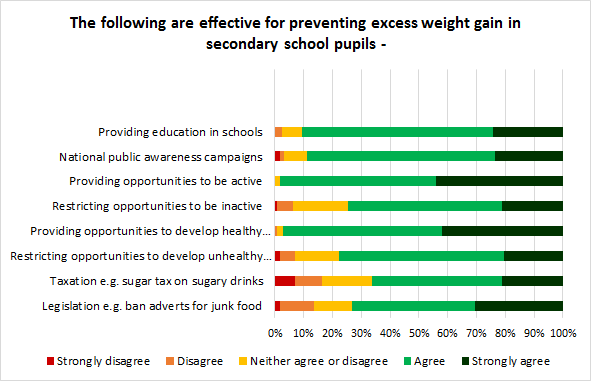


Figure 8.9 – Responses to questions presented in section five of the questionnaire (Q4)

Following Mann-Whitney U tests being performed, two statistically significant differences in the strength of agreement with each statement for different groups were observed - 1) Headteachers agreed more strongly (at a statistically significant level  - p = 0.02) that providing education in schools is an effective approach, and 2) Males agreed more strongly (at a statistically significant level - p = 0.04) that restricting opportunities to develop unhealthy eating habits is an effective approach.

Following Spearman’s correlation coefficient tests being conducted, two results indicated a statistically significant finding.  A weak negative correlation existed between a school’s pupil population and the strength of agreement with the provision of education in schools (r = .184, p = 0.038) and the provision of opportunities to be active (r = -.195, p = 0.028).

In addition to the question and accompanying Likert scales regarding facilitators, participants were presented with the following open optional question -

*‘What other approaches to preventing excess weight gain in secondary school pupils are or could be effective?’*

In total 17 responses were received and reflected upon, with the researcher analysing the resultant text for commonality.  Table 8.3 therefore presents a summary of the ‘other approaches’ provided by participations, in addition to verbatim quotations which aim to illustrate the findings.

Table 8.3 – Responses to open question regarding ‘other approaches’

|  |  |
| --- | --- |
| **Other approaches** | **Verbatim quotation** |
| * Increased resources for physical activity and sport provision both inside and outside of the secondary school setting      * Increased education for all stakeholders (i.e. schools, parents and adolescents) * Increased accessibility to and funding for school nursing and support services (i.e. dietetics)      * Improve the safety or the perceived parental safety of communities * Cheaper food for schools and free provision of meals for pupils during the school day | * *“The government could fund sports clubs in schools run by local club leaders in sports/activities not commonly available in the school curriculum.”* **(Headteacher)**      * *“Education around other factors contributing to this, i.e. mental health, self-esteem, disability and a lack of money for activity.”* **(Headteacher)** * *“Easy availability of school nurse and support services.”* **(Headteacher)** * *“Make the streets and parks and playing fields safe places for children and teenagers to go.”* **(Headteacher)**      * *“Providing breakfast and/or lunch for all, free of charge.”* **(Headteacher)** |

The last figure 8.10 presented within the theme of ‘Shared responsibility, collective solutions’, displays summarised responses related to who secondary schools should work in partnership with to help prevent excess weight gain in secondary school pupils.  The majority of survey respondents either agreed or strongly agreed that partnership working should occur with all those listed in figure 16.  The top three partners who received the largest proportion of agreement were School nurses (92.1%), Local Authority Public Health teams (90.5%) and the Department of Health (87.4%).  Celebrities as a category produced the most even distribution of responses, in addition to the largest proportion of neutral responses (29.9% neither agreed or disagreed), and disagreement (18.9% disagreed or strongly disagreed).

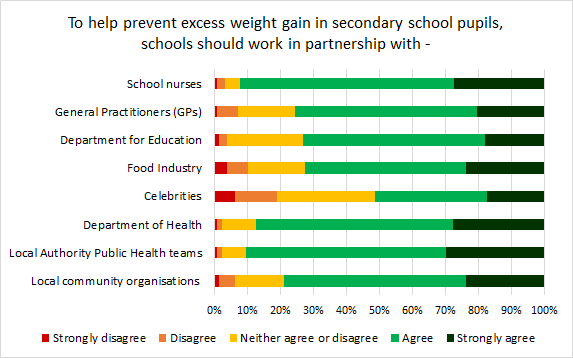


Figure 8.10 - Responses to questions presented in section five of the questionnaire (Q6)

Following the use of Mann-Whitney U tests, only one statistically significant difference between groups and the statements displayed in the above figure was detected (related to gender) following the use of Mann-Whitney U tests.  Males agreed more strongly than females that schools should work in partnership with the Department of Health (P = 0.03).

Following Spearman’s correlation coefficient tests being conducted, two results indicated a statistically significant finding.  There was a weak positive correlation evidenced between one measure of pupil disadvantage and the strength of agreement related to partnership working with General Practitioners - (Q2 - r = .187, p = 0.044).  A weak negative correlation was identified between school pupil population and the strength of agreement related to partnership working with local authority public health teams (r = -.207, p = 0.020) and local community organisations (r = -.210, p = 0.018).

8.4.4 Secondary school setting

Figure 8.11, presents summarised responses to a series of five statements relating to the theme of the ‘Secondary school setting’.  A majority of participants deemed improving dietary habits (73.2%) and improving physical activity habits (69.3%) of secondary school pupils to be a priority.  In contrast a smaller proportion (37%) agreed or strongly agreed with the statement that preventing excess weight gain in secondary school pupils is a priority.

For 44.9% of survey respondents, they agreed or strongly agreed that there are more important issues to deal with than excess weight prevention in secondary school pupils, although over a third (37%) selected a neutral position (neither agreed or disagreed).  As displayed in figure 8.11, the statement obtaining the largest majority of agreement (81.9% agreeing or strongly agreeing), centred on the opinion that school staff should role model healthy lifestyles to secondary school pupils.

Mann-Whitney U tests were conducted to identify statistically significant differences in the strength of agreement with each statement for different groups (i.e. role types, school types and genders).  Only one statistically significant difference was identified related to role type.  Headteachers agreed more strongly than chairs of governors that school staff should role model healthy lifestyles to secondary school pupils (P = 0.02).

Having conducted Spearman’s correlation coefficient, no statistically significant correlation was evidenced between pupil disadvantage, school pupil population and the below statements.

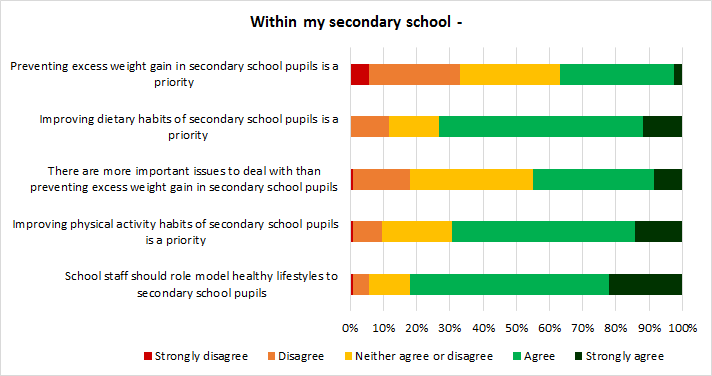
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Figure 8.11 - Responses to questions presented in section four of the questionnaire (Q1)

Figure 8.12 below displays summarised responses to a series of statements, which continue to relate to the theme of the secondary school setting.  A significant majority of participants believed that secondary schools are an important setting for preventing excess weight gain in secondary school pupils (78% agreed or strongly agreed) and are able to positively influence both the dietary (76.4% agreed or strongly agreed) and physical activity (87.4% agreed or strongly agreed) habits of pupils.  A larger majority of participants (93.7% agreed or strongly agreed), believed that secondary schools should use a whole-school approach to develop life-long healthy eating and physical activity practices.  Less than half of survey respondents (40.2%) disagreed or strongly disagreed with the statement that secondary schools are not able to prevent excess weight gain in secondary school pupils, with a further 33.8% remaining neutral on this position (neither agreeing or disagreeing).

Results from conducting Mann-Whitney U tests indicated that there was no statistically significant difference between role types or school type and the strength of agreement with the above statements (Appendix L for p values).  Only one statement indicated a statistically significant difference for genders.  Males in comparison to females more strongly agreed with the statement that secondary schools are an important setting for preventing excess weight in secondary school pupils (p = 0.033).

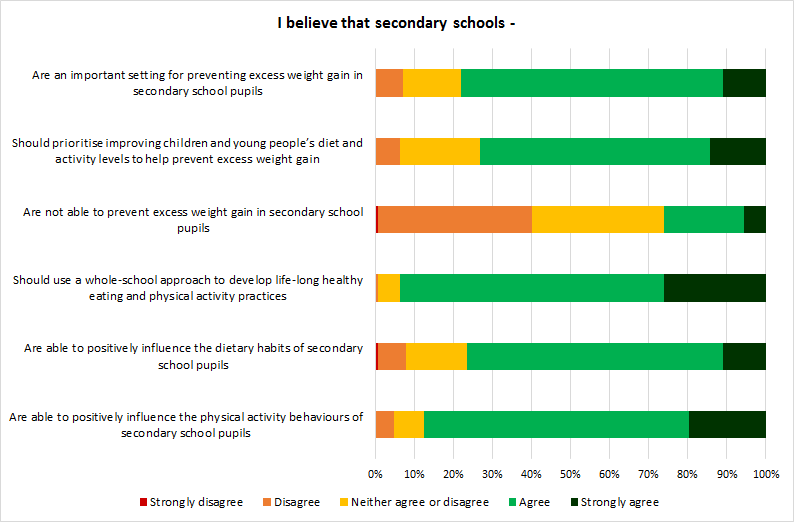
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  Figure 8.12 – Responses to questions presented in section four of the questionnaire (Q2)

Following Spearman’s correlation coefficient tests being conducted, two results indicated a statistically significant finding.  There was a weak negative correlation evidenced between one measure of pupil disadvantage and the strength of agreement related to the fourth statement in figure 18 above (i.e. Should use a whole school approach..) - (Q1 - r = -.217, p = 0.024).  A weak negative correlation was identified between school pupil population and the strength of agreement related the second statement in figure 8.12 (i.e. Should prioritise..) - (r = -.189, p = 0.033).

The next figure displayed (figure 8.13), includes a range of statements that related specifically to participants role as either a headteacher or chair of governors.  Regarding the first two statements, derived from the NICE pathway for childhood obesity prevention, the majority of survey respondents either agreed or strongly agreed (68.5% and 89.8% respectively).  Two statements that resulted in the largest proportion of disagreement, related to the perception of responsibility for preventing excess weight gain (30.6%) and attendance at meetings where preventing excess weight gain is discussed (34.7%).

Mann-Whitney U tests were conducted to identify statistically significant differences in the strength of agreement with each statement presented in figure 8.13, across different groups (i.e. role types, school types and genders).  Headteachers and participants from non-state funded schools agreed more strongly with the first statement than chairs of governors and participants from state funded schools (i.e. Should collaborate with parents..) - (p = 0.01 and p = 0.002 respectively).  Participants from non-state funded schools agreed more strongly than participants from state funded schools that they are able to direct the school to take action to prevent excess weight in secondary school pupils (p = 0.01) and have a responsibility for excess weight prevention (p = 0.004).  And finally males compared to females agreed more strongly that they were able to positively contribute to the prevention of excess weight gain in secondary school pupils (p = 0.02).

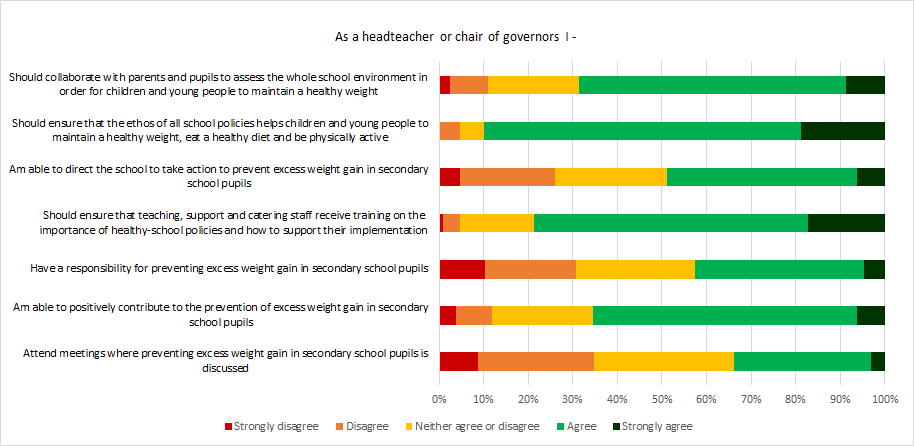
****Following Spearman’s correlation coefficient tests being conducted, three results indicated a statistically significant finding.  There was a positive negative correlation evidenced between one measure of pupil disadvantage and the strength of agreement related to the last statement in figure 18 above (i.e. Attend meetings...) - (Q1 - r = -.180, p = 0.052).  A weak positive correlation was identified between school pupil population and the strength of agreement related to the first statement in figure 8.13 (i.e. Should collaborate..) - (r = .207, p = 0.002).  The fifth statement (i.e. Have a responsibility for..) had a weak and negative correlation with school pupil population (r = -.188 (p = 0.034).

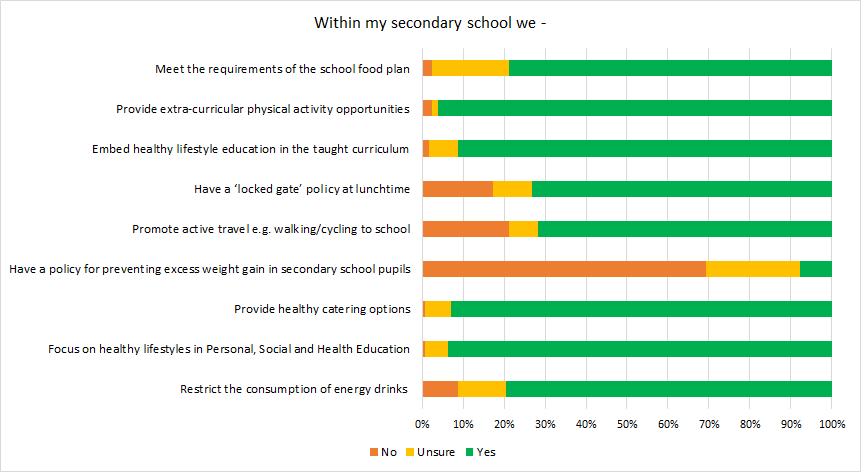
Figure 8.13 – Responses to questions presented in section four of the questionnaire (Q3)

Figure 8.14, presents summarised responses to the question regarding the existence of actions within a participant’s secondary school, which could contribute to the prevention of excess weight gain in secondary school pupils.  The majority of participants selected ‘Yes’ to all but one statement, with 69.3% reported that their secondary school did not have a policy for preventing excess weight gain. A further 22.8% of respondents reported being unsure as to whether they did.  The three statements, that received the highest proportions of ‘Yes’ responses related to the provision of extra-curricular physical activity opportunities (96%), the focus on healthy lifestyle in Personal, Social and Health Education (93.7%) and the provision of healthy catering options (92.9%).  Aside from the statement related to having a policy for excess weight prevention, the two statements that received the highest proportions of ‘No’ responses related to the promotion of active travel (21.3%), having a locked gate policy at lunchtime (17.3%).

In relation to inferential statistics for this particular question and driven by the qualitative findings, the researcher was interested in examining two specific associations (as detailed in chapter seven). Firstly, did a statistically significant association exist between participant school type, i.e. state or non-state funded and the likelihood of answering ‘Yes’ or ‘No’ to each of the statements presented in figure 8.14?  Secondly, did a statistically significant association exist between participant role type, i.e. headteacher or chair of governor and the likelihood of choosing either ‘Unsure’ or ‘Yes’/‘No’ to each statement below?

Given that this question utilised a nominal response scale, i.e. ‘Yes’, ‘No’ and ‘Unsure’, the use of a Mann-Whitney U tests was deemed inappropriate to examine the specific associations of interest.  Consequently, Chi-squared tests were performed instead.  Results indicated that out of the nine statements presented in figure 20, three indicated statistically significant associations regarding participant school types. State funded schools were more likely to say ‘Yes’ to the provision of extra-curricular activity opportunities (p = 0.01) and the promotion of active travel (p = 0.02).  Non-state funded schools were more likely to have a policy for preventing excess weight in secondary school pupils (P = 0.04).

In relation to the participant role type, results from the Chi-squared tests indicated that chairs of governors were more likely to select ‘Unsure’ for the following statements 1) Embed healthy lifestyle education in the taught curriculum (P = 0.01), 2) Have a policy for preventing excess weight gain in secondary school pupils (P = 0.00) and 3) Restrict the consumption of energy drinks (P = 0.00).

****  Figure 8.14 – Responses to questions presented in section four of the questionnaire (Q4)

Participants were asked to indicate their level of agreement with various statements relating to barriers to schools preventing excess weight gain in secondary school pupils (see figure 8.15).  The top three barriers based on strength of agreement (either agreed or strongly agreed) were the government’s focus on academic progress (59.8%), parental influence undermining school action (59%) and availability of junk food near to a participant’s school (55.2%).  The barriers which received the lowest proportion of agreement were lack of facilities for physical activity (71.6% disagreed or strongly disagreed), school staff not role modelling healthy lifestyles (disagreed or strongly disagreed 62.2%) and schools not being inspected by Ofsted on excess weight prevention (disagreed or strongly disagreed 53.5%).

Results from conducting Mann-Whitney U tests indicated that there was no statistically significant difference between genders and strength of agreement with the statements presented in figure 8.15 (Appendix L for p values).  Only one statement indicated a statistically significant difference for role types, with chairs of governors more strongly agreeing with the barrier that schools are not inspected by Ofsted on excess weight prevention (p = 0.03).  In relation to school type, state funded schools more strongly agreed that limited funding for school catering (p = 0.009) and parental influence undermining school action (p = 0.001) were barriers to preventing excess weight in secondary school pupils.

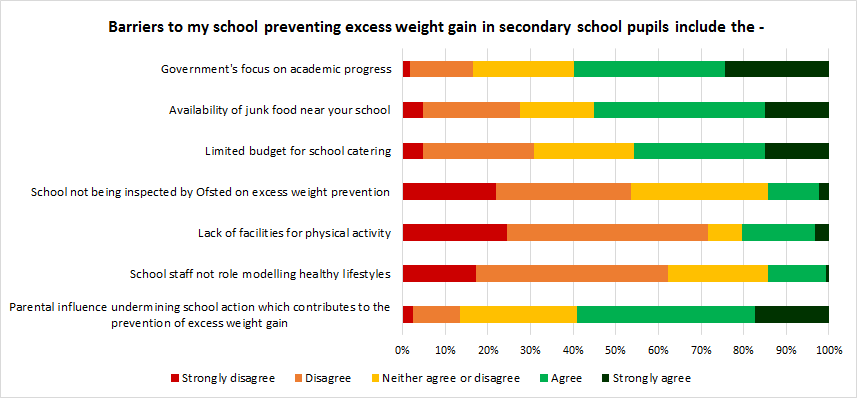
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Figure 8.15 – Responses to questions presented in section four of the questionnaire (Q5)

Following Spearman’s correlation coefficient tests being conducted, seven results indicated a statistically significant finding (Appendix L for p values). Table 8.4 below, presents the test values and associated p values for where a statistically significant result was identified.

Table 8.4 – Results of Spearman’s correlation coefficient tests regarding ‘barriers’

|  |  |  |  |
| --- | --- | --- | --- |
| **Barriers to my school preventing excess weight gain in secondary school pupils include the -** | **% pupils currently receiving free school meals** | **% pupils who have been eligible at any time for free school meals in the last 6 years** | **School pupil population** |
| Government's focus on academic progress | - | r = .207  (p = 0.025) | - |
| Availability of junk food near your school | r = .182  (p = 0.059) | r = .179  (p = 0.053) | - |
| Lack of facilities for physical activity | - | - | r = -.258  (p = 0.003) |
| Parental influence undermining school action which contributes to the prevention of excess weight gain | r = .303  (p = 0.001) | r = .216  (p = 0.019) | r = .170  (p = 0.057) |

In addition to the question and accompanying Likert scales regarding barriers, participants were presented with the following open optional question:

*‘Please describe any other barriers to your school for preventing excess weight gain in secondary school pupils’*

In total 27 responses were received and reflected upon, with the researcher analysing the resultant text for commonality.  Table 8.5 therefore presents a summary of the ‘other barriers’ provided by participations, in addition to verbatim quotations, which aim to illustrate the findings.

Table 8.5 – Responses to open question regarding ‘other barriers’

|  |  |
| --- | --- |
| **Other barriers** | **Verbatim quotation** |
| * Increasing autonomy during adolescence for food and physical activity choices      * Excess weight or unhealthy lifestyle behaviours already being established during primary school      * Financial pressures overall in secondary school settings      * Genetic factors      * Lack of time for focusing on wider issues than education      * Influence of peers on adolescent choices      * Lack of access to school nurses      * Mixed health messages        * Influence of technology on adolescent lifestyle behaviours      * Concern over excess weight prevention leading to eating disorders      * Advertising and easy accessibility of cheap unhealthy foods within society          * Family financial pressures | * *“Secondary school students have money and freedom to buy food on their way to and from school.”* **(Headteacher)**      * *“Pupils with excessive weight already apparent at Year 7”* **(Headteacher)**      * *“There is a lack of adequate funding in schools overall, let alone to cover health.”* **(Chair of governors)**      * *“We have no control over genetic factors.”* **(Headteacher)** * *“We only see pupils for around 7 hours per day, and that time is filled.”* **(Chair of governors)**      * *“Parents and peers are the strongest influences.”* **(Headteacher)**      * *“Access to school nurses need to be improved.”* **(Chairs of governors)**      * *“Common sense easy to understand messages are vital.”* **(Chairs of governors)**      * *“Social Media, gaming prevents many young people from participating in sport.”* **(Headteacher)**      * *“After all, if we are not careful we will end up with students with eating disorders.”* **(Headteacher)** * *“Advertising of high fat high sugar foods and the fact that they are generally cheaper and more readily available than healthy foods. E.g. Cakes & biscuits are far more likely to be "BOGOF" than apples and bananas.”* **(Chairs of governors)** * *“Social economic pressures, i.e. a lot of families who hit the Governments IDACI [*Income Deprivation Affecting Children Index*] factors eat more carbohydrate and fat based foods, i.e. inexpensive than more healthy options”* **(Headteacher)** |

For one question an error was made in how the Likert scale was labelled within the questionnaire.  The option ‘Neither agree or disagree’ was repeated instead of using the required ‘Strongly agree’.  Consequently, this affected how the data was coded by the online data collection tool (Google Forms), and resulted in responses from these two Likert scale options being rendered unusable for analysis.  Table 8.6 provides a summary of responses received for the correctly named labels ‘Strongly disagree’, ‘Disagree’ and ‘Agree’ and the percentage of responses deemed unusable.

Table 8.6 – Summary of responses (percentages) regarding facilitators

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **The following facilitators would help my secondary school to prevent excess weight gain in secondary school pupils -** | **SD**  **(%)** | **D**  **(%)** | **A**  **(%)** | **Unusable responses**  **(%)** |
| Training about excess weight prevention for school staff | 3.9 | 15 | 50.4 | 30.7 |
| Ofsted monitoring of school action that contributes to prevention of excess weight gain | 21.3 | 33.1 | 18 | 27.6 |
| Government funding for action contributing to excess weight prevention | 3.1 | 7.1 | 63 | 26.8 |
| Greater ability to determine my school priorities | 6.3 | 25.2 | 26.8 | 41.7 |
| National guidelines for preventing excess weight gain in secondary school pupils | 6.3 | 10.2 | 52 | 31.5 |

 From the table presented above, it is possible to identify that approximately half of participants agreed that training for school staff (50.4%) and national guidelines (52%) would help secondary schools prevent excess weight gain in secondary schools pupils.  Furthermore, a majority (63%) deemed that government funding for action contributing to excess weight prevention would be a facilitator.  In contrast, over half (54.4%) of respondents either disagreed or strongly disagreed that Ofsted monitoring school action would help secondary schools prevent excess weight gain in secondary school pupils.

In addition to the question and accompanying Likert scales regarding facilitators, participants were presented with the following open optional question:

*‘Please describe any other facilitators that would help your school to prevent excess weight gain in secondary school pupils’*

In total 18 responses were received and reflected upon, with the researcher analysing the resultant text for commonality.  Table 8.7 therefore presents a summary of the ‘other facilitators’ provided by participations, in addition to verbatim quotations, which aim to illustrate the findings.

Table 8.7 - Responses to open question regarding ‘other facilitators’

|  |  |
| --- | --- |
| **Other facilitators** | **Verbatim quotation** |
| * Earlier preventative interventions within school and health settings          * Improved sports and physical activity facilities within secondary school settings      * Increased parental responsibility and accountability for their child’s weight            * Increased accessibility to and funding for school nursing services      * Improved collaborative working across multi-agency partners          * Increased governmental focus and interventions for addressing childhood and adolescent obesity | * *“Sort this whole issue out in early years and primary - any overweight child arrives as such into secondary education - rarely do they become overweight during this time”* **(Headteacher)**      * *“Provide more space and better sports facilities in new schools”* **(Headteacher)**      * *“An end to the fallacy that schools can solve all social issues and a return to some semblance of sanity in relation to what parents and individuals should take responsibility for rather than transferring it to professionals with no real control over the most important factors.”* **(Headteacher)**      * *“Easy availability of school nurse and support services”.* **(Headteacher)**      * *“All the national and local agencies (e.g. NHS, DfE, Sport England, Youth Sport Trust, exchequer, academia) to collaborate effectively and pool knowledge and resources”.* **(Headteacher)**      * *“This area needs to be a key priority nationally with Government fully behind proposals. It should not be a 'bolt-on' afterthought“.* **(Headteacher)** |

The final question presented within the online questionnaire, was an open question offering participants the opportunity to provide any further comments regarding the topic under study:

*‘Please provide any further comments you have about the prevention of excess weight gain in secondary schools’*

In total, 14 responses were obtained from this question all from participants either employed at or elected to positions within state-funded secondary schools.  The length of responses ranged from single word answers to a short paragraph of text.  Despite the inability to undertake a formal thematic analysis of the qualitative data obtained, responses were collated, reflected upon and areas of commonality identified.

The responses obtained to this question reflected a diverse range of opinions all of which having reviewed the qualitative findings report were captured within the presented themes and sub-themes.  Several participant’s used the further comments question, to reflect upon the secondary school setting, with some proposing the need for ‘more holistic education’, a greater emphasis on Personal Health and Social education and an increased provision for physical activity and sporting opportunities.

* *“Regular and varied sporting activities and other outdoor and indoor social activities for pupils. No opting out. Crucial age for sporting activity lies within secondary age."* **(Headteacher)**

Concerns were raised regarding the lack of financial resources and time secondary schools have to address excess weight, lifestyle behaviours and wider health and well-being issues. This was deemed problematic given the increasing pressure on academic performance.

* *“We do not have the basic resources to do the rest of our job at present (you know, the stuff about learning and passing exams) so I would not welcome additional responsibilities for things that lie beyond our control because society has become infantilised and over-reliant on professional intervention (especially when those professionals are nearly always teachers!)”* **(Headteacher)**

For some participants, the question was posed as to whether addressing excess weight gain it is in fact a school’s responsibility.

* *“In my view, far too much of society's/parent's responsibilities are being defaulted to schools”* **(Headteacher)**

Concern and criticism was directed at wider societal factors perceived to be causing not only excess gain, but the development of unhealthy lifestyle behaviours, negative body image and stigma in adolescence.  The role and influence of partners including statutory agencies was discussed by some, however in the main this was associated with comments regarding the current limitations of partnership working.

* *“Support from statutory agencies is limited due to government cutbacks.”* **(Chair of governors)**

**Chapter 9**

**Discussion**

**9.1 Introduction**

This chapter provides a detailed discussion of the main study findings, specifically addressing the original research question and associated aims and objectives.  Comprised of three overarching sections, the first presents a brief summary of the study, in terms of how it was designed and conducted.  Following this, findings from both phases of the study are integrated and collectively discussed within section two.  In addition, the main overarching study findings are reflected upon in the context of existing literature and academic theory.  The third and final section, provides a comprehensive critique of the overall doctoral study.

**9.2 Summary of the study**

Childhood and adolescent obesity is a significant public health issue (Lobstein and McPherson, 2016).  Over a third of children aged 10 to 11 years and adolescents aged 12 to 15 years in England are overweight or obese (NHS Digital, 2016b).  The causes of obesity throughout the life course are multifactorial and complex, with genetic, behavioural and environmental factors all playing a role (Jebb et al., 2007).  Excess weight in children, adolescents and adults negatively impacts upon an individual's risk of morbidity and premature mortality (Ebbeling et al., 2002), in addition to presenting a substantial economic and social burden to society (Wang et al., 2011). Prevention is perceived as the most effective solution to addressing obesity, with schools identified as a key setting for undertaking preventative action (Waters and Silva-Sanigorski, 2011).

Within a school environment, and as proposed by NICE, headteachers and chairs of governors are identified as critical stakeholders for determining whether and how a school contributes to the prevention of excess weight in childhood and adolescence (Clarke et al., 2015; Howard-Drake and Halliday, 2015; National Institute of Health and Care Excellence, 2015a; Todd et al., 2015). Despite this and as evidenced by the systematic review and qualitative synthesis undertaken for this research, there is a paucity of literature exploring headteachers’ and chairs of governors’ views on obesity and its prevention especially at a secondary school level.  Consequently, a strong justification was provided for this doctoral study to address the following research question:

*‘What are the perspectives of headteachers’ and chairs of governors’ on adolescent obesity and its prevention in English secondary school settings?’*

In addition, research aims and related objectives were developed to support the researcher’s ability to provide a robust and comprehensive answer to the question proposed:

Aim 1

Within an initial and core qualitative research phase, explore and understand in-depth headteachers’ and chairs of governors’ views and experiences of adolescent obesity and its prevention in English secondary school settings

*Aim 1 Objectives*

* Conduct a systematic review and qualitative synthesis in order to position the research question within existing literature and inform the approach to qualitative data collection
* Undertake semi-structured face to face interviews with headteachers and chairs of governors in England
* Develop and utilise an interview schedule that will enable an in-depth exploration and discussion with interview participants on the following topics -
* Childhood and adolescent obesity causation and consequences
* Types of activity or action undertaken in secondary school settings that contributes to preventing childhood obesity
* Roles of schools, headteachers and chairs of governors in preventing childhood obesity in secondary schools
* The barriers and facilitators of preventing childhood obesity in secondary schools
* Conduct a thematic analysis of the collected interview data, in order to generate a cohesive narrative of the qualitative findings

Aim 2

Within a supplementary quantitative research phase and in order to determine the relevance of the qualitative findings outside of their original context, conduct a descriptive cross-sectional survey which identifies headteachers’ and chairs of governors’ opinions and attitudes towards adolescent obesity and its prevention in English secondary school settings.

*Aim 2 Objectives*

* Develop and pilot test an appropriate survey data collection tool, i.e. online questionnaire, for use with a larger sample of secondary school headteachers and chairs of governors
* Design the structure and the content of the online questionnaire around the analysed qualitative findings and resultant themes
* Distribute the pilot tested online questionnaire to the census of secondary school headteachers and chairs of governors in England
* Utilise descriptive and inferential statistics to analyse survey data and examine relationship between demographics and identified attitudes and opinions

To address the research question, aims and objectives, a mixed methods approach was deemed to be the most appropriate.  Underpinned by a pragmatic philosophical worldview and informed by the results of a systematic review and qualitative synthesis, a mixed methods research design (exploratory sequential) was adopted enabling the study to be delivered in two distinct yet integrated phases (Creswell and Plano Clark, 2011).  Starting with a core qualitative phase, the researcher undertook 22 semi-structured interviews with a purposive sample of headteachers and chairs of governors from across two geographical regions in England (Yorkshire and the Humber and West Midlands).  The resultant verbatim transcripts were thematically analysed (Braun and Clarke, 2006), leading to the emergence of four overarching themes:

1. Perceptions of adolescent obesity and lifestyle behaviours
2. Influence of place
3. Shared responsibility, collective solutions
4. Secondary school setting

The two study phases were integrated at the point of the qualitative findings being utilised to develop a data collection tool (i.e. online questionnaire) for use in a survey during the supplementary quantitative phase.

The finalised online questionnaire, split across six sections included a range of demographic questions and a series of statements with Likert scales all relating to the reported qualitative themes and subthemes.  In order to electronically distribute the online questionnaire, the contact information and email addresses for all secondary schools in England was obtained via a Freedom of Information request to the Department for Education.

Over a period of two months, the online questionnaire and an invitation for each school’s respective headteacher and chair of governors to participate was distributed to the census of secondary schools in England.  In total, following the original invitation and two subsequent reminders, 127 participants completed the online questionnaire in full representing a 2.8% response rate.  Responses were analysed and reported using descriptive and inferential statistics.

**9.3 Integrated discussion of findings**

Within this section findings from the two respective phases of the research are considered and interpreted collectively in order to provide an integrated discussion of the overall study findings.

Integration of the qualitative and quantitative elements in an exploratory sequential mixed methods design is primarily focused on the point at which a quantitative instrument is developed from qualitative findings.  However, in addition to adopting an exploratory sequential design for instrument development, the ambition was for the supplementary quantitative method to provide additional evidence, which would support the core qualitative research findings.  Furthermore, as proposed by Bryman (2007), an important characteristic of mixed methods research in the final stage, is that the qualitative and quantitative elements are able to *“talk to each other, much like a conversation of debate”,* in order to provide *“an overall or negotiated account of what they mean together”* (p.21).  Consequently, and in recognition of expert guidance (O’Cathain, Personal communication, 2015), this section attempts to combine, compare and contrast findings from the two distinct study phases, so that a comprehensive and illuminative answer to the research question posed can be provided.

The overarching research question for this doctoral study was as follows -

*‘What are headteachers’ and chairs of governors’ perspectives on adolescent obesity and its prevention in secondary school settings?’*

This section proposes to answer this research question by discussing the main findings of the study.  Throughout this integrated discussion, unless explicitly stated, the proposed main findings of the study are applicable to both phases of the research.  Where general agreement or consensus of opinion between the qualitative and quantitative findings was not identified this will be openly referenced within the section.

As the main findings of the study are considered and discussed, reflections will be made to the results from the systematic review and qualitative synthesis and wider pertinent literature.  The purpose of this is to ensure that all future recommendations are grounded within the findings and relevant evidence base.  Furthermore, throughout the section, academic theory and theoretical concepts are briefly referenced in order to provide an additional level of explanation and interpretation for the main study findings.

9.3.1 Main findings of the study

9.3.1.1 The scale of the ‘problem’

First and foremost, this study has shown that headteachers and chairs of governors recognise that there is an increasing problem related to the public health challenge of obesity, unhealthy dietary habits and sedentary behaviour both in adolescence and in wider society.  However, and consistent with earlier findings with headteachers in UK primary school settings (Clarke et al, 2015; Howard-Drake and Halliday, 2015; Todd et al., 2015), substantial variation existed in the level of concern reported, regarding the scale of obesity amongst their own school pupil population.  Despite a minority of participants across both phases reporting high prevalence of adolescent obesity, in the main headteachers and chairs of governors perceived that obesity was an issue affecting only a small proportion of pupils within their school. A finding echoed across previous studies (Nollen et al., 2007; Tripp and Choi, 2014; Howard-Drake and Halliday, 2015; Todd et al., 2015).

This finding originally identified within the qualitative phase, was further confirmed with additional evidence from the quantitative phase where 46.5% of participants estimated the prevalence of excess weight in their pupil population to be 0 to 10% and a further 29.1% estimating prevalence at 11 to 20%. As reported in the general review of the literature, over a third of children aged 10-11 years in England are assessed as either overweight or obese as they leave primary school, with prevalence increasing throughout secondary school education (NHS Digital, 2016b). It is of course, not possible to verify the accuracy of the estimations provided. However, the significantly lower than average prevalence reported across both phases regardless of school type or reported pupil disadvantage, may indicate that headteachers and chairs of governors underestimate the actual scale of the problem of adolescent obesity.  Supporting this finding, is the recognition of this potential disparity by participants themselves and by academic literature (Jones et al., 2011; Robinson and Hogenkamp, 2015), which proposes that visual assessment is not an accurate method of identifying unhealthy weight.

Only one previous study (Howard-Drake and Halliday, 2015) has reported that headteachers (based in English primary schools), may underestimate the prevalence of childhood obesity in their school setting.  Despite this, given the small sample size and the paucity of relevant literature related to this finding, it is not possible to generalise as to whether headteachers and chairs of governors more broadly are able to correctly recognise excess weight in children or adolescence.  Extensive evidence has however explored the phenomenon of underestimating obesity.  Other key stakeholders identified as crucial for preventing obesity in childhood and adolescence, have also been identified as being unable to identify unhealthy weight.  These include parents (Rietmeijer-Mentink et al., 2013; Lundahl et al., 2014; Tompkins et al., 2015), clinicians (Robinson et al., 2014; Wong et al., 2016) and adolescents themselves (Chaimovitz et al., 2008; Standley et al., 2009; Buttenheim et al., 2013).

One theoretical explanation that could attempt to account for headteachers and chairs of governors potential inability to visually recognise obesity in adolescents is the normalisation of excess weight in society (Johnson et al., 2008; Burke et al., 2010). Underpinning this theory is the concept that as the proportions of obesity in the population have increased over time, the visual perception and acceptance of what constitutes a healthy weight has become distorted and a new social norm has formed (Moffat, 2010; Robinson and Christiansen, 2014). Consequently, with the average weight of children, adolescents and adults rising, *“so does that population’s familiarity with, and acceptance of, increased body mass”* (Patterson, 2013, p.82).

A further consideration for the potential underestimation of weight or the varying level of concern expressed by headteachers and chairs of governors could be linked to the complex and contested language used to define and frame obesity (Flegal and Ogden, 2011).  As discussed in the review of the literature, the terminology and definitions used to describe obesity in childhood varies.  Furthermore, it has been argued that there has been an increasing medicalisation of the terms used to depict obesity both in the mainstream media and public health settings (Chang and Christakis, 2002; de Vries, 2007; Moffat, 2010). Consequently, when presented with questions regarding concern for or prevalence of excess weight, participants may have only reflected upon on the numbers of adolescents who present extreme obesity or who have been medically diagnosed (Klein and Dietz, 2010).

For specialists and policy makers in public health, the finding that secondary school headteachers and chairs of governors may underestimate the prevalence of adolescent obesity or may not deem the issue as a concern, is of potential significance.  It could reasonably be suggested, that without the awareness or knowledge about the actual scale and severity of the problem in their setting, it is unlikely headteachers and chairs of governors will implement a proportionate response and as per the guidelines issued by NICE (National Institute of Health and Care Excellence, 2015a). Consequently, this finding may indicate that a need exists for public health professionals to increase the awareness amongst headteachers and chairs of governors regarding adolescent obesity in terms of reporting objective measures of prevalence and associated risks.  Whilst this might not shift the visual perception of obesity, it could foster greater advocacy and engagement from the key decision makers, who are able to determine the implementation of preventative action (Pagnini et al., 2009; Clarke et al., 2015).

Although adolescent obesity was broadly speaking not perceived to be a substantial problem in secondary schools, this study found that headteachers and chairs of governors are seriously concerned about unhealthy dietary habits and sedentary behaviour amongst their pupil population.  This consistent finding strongly evidenced in the qualitative phase, was supported by results in the quantitative phase, where participants reported greater concern regarding poor dietary habits (85.8%) and sedentary behaviour (71.6%) than excess weight (52%).  Concerns referenced were predominantly highlighted by headteachers, associated mainly with pupils from state-funded schools and related to behaviours outside of the school setting.  The general consensus was that pupils consume too much unhealthy foods and drinks, spend too long being sedentary and do not do enough physical activity.

Similar concerns regarding dietary behaviours of children were reported by headteachers and teachers in the USA (Tripp and Choi, 2014), although the lack of supporting data and the context specific nature of the study means it is not possible to confirm the relevance of these findings for this research.  Despite this, the identification from this study that headteachers and chairs of governors are concerned about the food habits of secondary school pupils, is perhaps unsurprising given results from the national survey on diet and nutrition (Public Health England, 2016a). Headteachers’ and chairs of governors’ perception that a large proportion of adolescents in England under consume fruit and vegetables and overly consume foods and drinks, which are high in sugar and fat, is consistent with both reported statistics (Public Health England, 2016a) and wider research (Pearson et al., 2009; Zahra et al., 2014; Coleman and Hagell, 2015).

In comparison to excess weight and dietary habits, a smaller proportion of headteachers and chairs of governors across both phases of the research expressed concern regarding the levels of physical inactivity in adolescence.  However, participants still broadly deemed their pupil population to be increasingly engaging in sedentary recreational activities and were therefore argued to be disproportionately inactive outside of the secondary school setting.  In contrast, the only identified study containing headteachers’ views on this topic, reported their students to be active and fit and engaging extensively in sporting opportunities both within and outside of the school curriculum (Nollen et al., 2007).  Despite this it is important to note, that due to an extremely small sample size of eight headteachers, the different geographical context to the UK (USA) and a lack of participant and school demographics, there is an inability to draw useful comparisons between the findings and this research.

In spite of the paucity of literature exploring headteachers’ and chairs of governors’ views, as presented in Chapter two, results from the Active Lifestyle Survey do provide weight to the validity of reported perceptions regarding inactivity in secondary school pupils.  Only 22% of children (23% for boys and 20% girls) aged five to 15 years met the physical activity guidelines (60 minutes or more on all seven days), with this percentage decreasing with age for both sexes (NHS Digital, 2017). Furthermore, over a fifth of 11 to 12 year olds and over a third of 13 to 15 year olds were deemed to be sedentary during weekends (i.e. primarily sitting or lying down for six hours or more per day), (NHS Digital, 2017).  In addition to national statistics, extensive epidemiological studies have evidenced participants perceptions that during adolescence and towards young adulthood physical activity uptake decreases and sedentary behaviour increases across both genders (Brodersen et al., 2007; Corder et al., 2015; Harding et al., 2015; Morton et al., 2016).

The concern expressed regarding unhealthy dietary habits and inactivity by headteachers and chairs of governors in this study could present crucial opportunities for public health professionals, organisations and policy makers involved in the obesity prevention agenda.  Whilst limited recognition or concern was expressed about the prevalence of obesity in secondary schools, both appear to be applied to the two key behavioural factors influencing adolescent weight status (Butland and Jebb, 2007).  Consequently, and resonating with previous research (Clarke et al., 2015), is the argument that instead of attempting to engage schools formally to tackle ‘obesity’, an increased willingness or desire may exist in school leadership or governance to address the unhealthy lifestyle behaviours related to obesity causation (Malik et al., 2006; Szajewska and Ruszczyński, 2010; Thorp et al., 2011; Tremblay et al., 2011; Hallal et al., 2012; Te Morenga et al., 2012).

9.3.1.2 The multiple spheres of influence

When considering the causes of adolescent obesity, a major finding resulting from this research is the recognition by headteachers and chairs of governors that multiple and connected spheres of influence affect adolescents’ ability and desire to achieve and maintain a healthy weight (Kenneth R McLeroy et al., 1988; Butland and Jebb, 2007; Sallis and Glanz, 2009). Originally identified in the qualitative phase, latterly confirmed in the quantitative phase and extensively supported in the existing evidence base, is the finding that participants view the home environment, the wider food environment and deprivation, as significantly influencing the lifestyle behaviours of children and adolescents (Butland and Jebb, 2007; Jebb et al., 2007; World Health Organization, 2012; Lobstein et al., 2015; National Institute of Health and Care Excellence, 2015b; World Health Organization, 2016c; House of Commons Health Select Committee, 2017). This finding, provides weight to the proposed existence of an ‘obesogenic environment’ (Swinburn et al., 2011), which as presented in the review of the literature is defined as the *“sum of the influences that the surroundings, opportunities or conditions of life have on promoting obesity in individuals and populations”* (Swinburn et al., 1999, p.564).

Social and environmental influences on obesity as proposed by participants and supported in the Foresight report (2007), can be understood within the Social Ecological Model (SEM) of Health promotion (McLeroy et al., 1988).  The SEM recognises the complex, interrelating relationship between an individual and their context and significant contributions to the understanding of the SEM include Bronfenbrenner’s Ecological Systems Theory (Bronfenbrenner, 1979) and McLeroy and colleagues Ecological Model of Health Behaviours (McLeroy et al., 1988).  When applied to obesity causation, the SEM can be utilised to reflect upon physiological, social, economic, physical, political and environmental factors influencing individual energy balance (Butland and Jebb, 2007; Lang and Rayner, 2007).  McLeroy and colleagues (McLeroy et al., 1988), proposed a SEM as spheres of influence (figure 9.1), namely intrapersonal, interpersonal, organizational, community and public policy to depict factors at multiple levels affecting behaviour (Mohammadpour-Ahranjani et al., 2014).

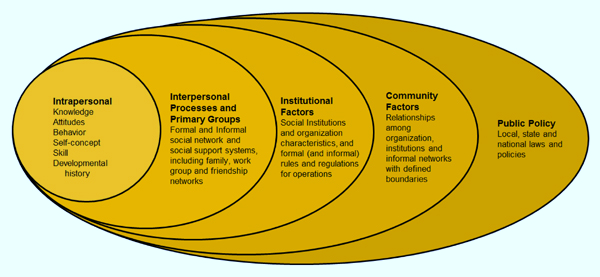


Figure 9.1 – Socio-Ecological Model (McLeroy et al., 1988)

Universally across both phases of the study, this research found that the belief that when reflecting upon the various layers of influence identified, the most significant determining factor for adolescent obesity and lifestyle behaviours is the role of the home environment and parents (i.e. within the interpersonal sphere).  This finding supports previous research (Nollen et al., 2007; Tripp and Choi, 2014; Clarke et al., 2015; Howard-Drake and Halliday, 2015; Todd et al., 2015), where parents were consistently identified by both headteachers and wider school stakeholders as performing the most influential role in childhood and adolescent obesity causation.

Although the concept of parental ‘blame’ for childhood and adolescent obesity (Mikhailovich and Morrison, 2007; Saguy and Almeling, 2008; Power et al., 2010) was first proposed in the qualitative phase, the majority of participants across both phases remained neutral when considering whether it is parents’ fault if their child is of excess weight.  Headteachers and chairs of governors in the qualitative phase were found to broadly recognise that parents as individuals themselves are products of the multiple spheres of influence affecting their own ability and desire to achieve energy balance (Butland and Jebb, 2007; Brownell et al., 2009; Pagnini et al., 2009).

As supported by academic literature, crucial factors were perceived to be underpinning whether parents are able to effectively prevent obesity in their children, namely; parental weight status and lifestyle habits (Reilly, 2005), parenting skills (Gerards and Kremers, 2015) and levels of awareness and knowledge regarding the importance and development of health enhancing behaviours (Lindsay et al., 2006).  Whilst a deficit in the required awareness and knowledge to prevent obesity was strongly associated with parents from lower socio-economic backgrounds in the qualitative phase, the quantitative phase only identified a statistically significant weak correlation.  Earlier studies (Clarke et al, 2015; Howard-Drake and Halliday, 2015) have however, previously identified the belief that parents from more deprived backgrounds appear to lack the knowledge and skills required to establish and maintain healthy lifestyle behaviours in a familial setting.

For public health specialists and policy makers, the finding that headteachers and chairs of governors deem parents to play a more influential role than schools in adolescent obesity could be of importance.  If headteachers and chairs of governors in both secondary and primary schools (Clarke et al, 2015; Howard-Drake and Halliday, 2015) believe they are unable to counteract the influence of the home environment or that parents are able to undermine school efforts, this could substantially impact upon their willingness and desire to engage in national approaches for addressing childhood obesity (HM Government, 2016).  Consequently, it is important that public health policy aiming to address childhood and adolescent obesity strives to develop consistency in messages and promotion of health enhancing behaviours within both home and school environments (Clarke et al., 2015).

In addition to the home environment, this study identified across both phases of the research the finding that headteachers and chairs of governors believe the wider food environment significantly influences the dietary preferences, habits and behaviours of adolescents.  Similarly to the home environment, the recognition of this influence can be viewed through a socio-ecological lens where the wider food environment is reflective of the community sphere (McLeroy et al., 1988).

Of pressing concern for participants predominantly in state-funded schools, was the perceived increasing availability and accessibility of junk and fast food outside of the secondary school setting.  Furthermore, a belief was shared across both research phases that unhealthy convenience food and drinks are typically cheaper and proactively marketed by the food industry for profits.  For headteachers and chairs of governors these factors were deemed to expose weaknesses in an adolescent’s ability and preference to adopt healthy dietary habits and maintain a healthy weight.  The proposed connection made by study participants between the wider food environment and dietary behaviours and obesity in children and adolescents has been extensively explored and established (Davis and Carpenter, 2009; Fraser et al., 2011; Utter et al., 2011; Caraher et al., 2014; Lobstein et al., 2015; World Health Organization, 2016c).

Crucially, was the identification by participants across both research phases that similarly to the home environment, influences within the wider food environment are able to support or undermine their school’s ability to improve the dietary behaviour and resultant weight status of secondary school pupils.  This was especially relevant for those who reported retailers of fast food or convenience foods being in close proximity to their school setting.  Although the majority of schools in the quantitative phase appeared to enforce a ‘locked-gate’ policy at lunch times, qualitative participants referred to adolescents purchasing unhealthy foods before or at the end of the school day.

This finding is relevant to public health policy makers given the increasing focus in the School Food Plan (Department for Education, 2013c) and national childhood obesity action plan (HM Government, 2016) on the role of schools and the importance of healthy food within school settings.  If the key stakeholders for obesity prevention within schools (National Institute of Health and Care Excellence, 2015a), are arguing that the greatest influences on adolescent dietary habits and obesity actually lie outside of their setting, it could be argued that an increasing focus in public health policy on improving the wider food environment should be considered.  This argument is supported and grounded in recommendations within national and international reports on preventing childhood obesity (WHO, 2016; House of Commons Health Select Committee, 2017) and by the recognition *that “schools may not be effective in reducing the risks posted in other settings”* (Wang et al., 2013, p.155).

Critically, it could be argued that the government’s latest childhood obesity plan (HM Government, 2016), fails to adequately consider this fact.  Aside from two key actions the broader negative influences in the wider food environment, i.e. junk food marketing and availability are largely unaddressed (Knai et al., 2016) adding weight to the argument that the plan is *“weak, disappointing, watered down, and underwhelming”* (O’Dowd, 2016, p.1).

In relation to the intrapersonal sphere of influence in the SEM, the qualitative phase originally identified the perspective that socio-economic status further compounds the negatives influences of the home and wider food environment and that increasing deprivation is associated with higher prevalence of adolescent obesity and particularly unhealthy dietary behaviours.  This finding is perhaps to be expected given that the qualitative sample was predominantly made up of participants from schools with a higher than national average proportion of disadvantaged pupils.  In spite of this, national reported statistics (NHS Digital, 2016a, 2016b) and a substantial body of academic literature has rigorously established the existence of this association, with children and adolescents from more deprived backgrounds evidenced as being more likely to be above a healthy weight, engage in poorer dietary habits and sedentary behaviour (Kinra, 2000; Stamatakis et al., 2005; Marmot, 2010; Stamatakis et al., 2010; Fraser and Edwards, 2010; Conrad and Capewell, 2012; World Health Organization Regional Office for Europe, 2014; Lee et al., 2014).

One explanation provided by participants in the qualitative phase for this observed relationship between deprivation, dietary habits and resultant obesity centred on the issue of low incomes limiting the ability to make healthy food choices and engage in health enhancing opportunities.  The ‘obesity-hunger paradox’, supports this by suggesting children and adolescents from deprived areas consume cheaper foods, which are typically energy dense and nutrient poor (Tanumihardjo et al., 2007).  Furthermore in areas of deprivation there is evidence of a higher concentration of opportunities to consume unhealthy foods and less availability to obtain nutritious healthy options (Cetateanu and Jones, 2014).

Interestingly, results from the quantitative phase both supported and conflicted the association of deprivation originally identified in the qualitative phase.  When explicitly asked, survey participants remained broadly neutral regarding the relationship between adolescents in receipt of free school meals (i.e. disadvantaged pupils) and excess weight, poor dietary habits and sedentary behaviour.  Despite this, statistically significant positive correlations were identified between the perceived existence and level of concern related to obesity and unhealthy lifestyle behaviours and the demographic variable of free school meal percentage.

In the qualitative phase, the strength of opinion regarding the influence of deprivation could be explained by the fact that the sample was overly represented by schools with a higher than national average percentage of pupil disadvantage.  However this does not account for the identified conflict within the survey results and although it is not clear why this disparity exists. Interestingly a dichotomy of views regarding deprivation and obesity is evident in the evidence base.  Despite earlier studies identifying the belief by headteachers in English primary schools that lower socio-economic status and childhood obesity are connected (Clarke et al., 2015; Howard-Drake and Halliday, 2015), others found that variability of obesity prevalence is not perceived by headteachers to be reflective of deprivation (Todd et al., 2015).  In fact, for one study based in Botswana (Shaibu et al., 2011), the reverse relationship was proposed by headteachers between increasing affluence and higher levels of excess weight and unhealthy lifestyle behaviours in adolescence.

It is important to acknowledge that the perceived relationship between deprivation, adolescent lifestyle behaviours and resultant weight status was believed to present a significant barrier to school based obesity prevention.  Despite this and similarly to other UK school settings (Bibby et al., 2017), pupil premium funding was reported to be utilised for providing disadvantaged pupils with health enhancing opportunities although this was not deemed sufficient to reduce the disparity in lifestyle behaviours attributed to the influence of socio-economic status.  Therefore, whilst engagement with schools to prevent obesity is entirely appropriate (Waters and Silva-Sanigorski, 2011; Wang et al., 2015), it is perhaps misguided to disproportionately expect a single setting to counteract the complex interrelating factors driving an individual’s behaviour and resultant weight status (Butland and Jebb, 2007; Wang et al., 2013).

Consequently and similar to considerations of the home and wider food environment, public health action to prevent obesity across the social gradient will not succeed if the underlying causes of unhealthy behaviour are not understood and addressed (Marmot, 2010; World Health Organization, 2016c). Public health interventions and action must recognise and account for changing contextual influences for different demographics over time, in order to deliver a *“broader interdisciplinary analysis and a sustained society wide response”* (Lang and Rayner, 2007, p.165).

9.3.1.3 The degrees of responsibility

Given that headteachers and chairs of governors originally in the qualitative phase, identified obesity causation as complex and contested, they supported the theory that no single stakeholder, organisation or setting has solo responsibility for addressing the issue (Butland and Jebb, 2007; World Health Organization, 2012; Lobstein et al., 2015; WHO, 2016; House of Commons Health Select Committee, 2017).  Despite this, this study found that participants attributed different degrees of responsibility to the various key stakeholders perceived to be involved in influencing adolescent lifestyle behaviours and obesity.  Extensive research has explored and discussed the concept of responsibility related to the prevention and treatment of obesity (Branson et al., 2012; Brown, 2013; Brownell et al., 2010; Lusk and Ellison, 2013; Pearl and Lebowitz, 2014; Kraak et al., 2014). Academic literature has supported the connection made by some interview participants that perceptions of responsibility can relate to an individual’s political ideology (Barry et al., 2012; Branson et al., 2012; Kraak et al., 2014).

Resonating with earlier research regarding headteachers’ views (Clarke et al., 2015; Howard-Drake, 2015; Todd et al., 2015), was the overwhelming view across both study phases that parents have personal and primary responsibility for the prevention of obesity.  Central to this belief was the proposed parental obligation or duty to keep their children healthy and provide health enhancing opportunities.  Secondary to parents, adolescents were viewed particularly in the quantitative phase and by non-state school participants, as having increasing personal responsibility for maintaining a healthy weight and engaging in healthy lifestyle behaviours as they transition into young adulthood.

In contrast to the promotion of personal responsibility and given the general recognition by participants that obesity results from an increasing obesogenic environment (Swinburn et al., 2011), this study found support albeit to varying degrees, for responsibility to also be attributed to the food industry and government.  Whilst this view was not referenced in studies resulting from the systematic review and qualitative synthesis, responses from the quantitative survey provided additional evidence for this original qualitative finding.

Food manufacturers and retailers were proposed as having a significant responsibility for ensuring the appropriate production and marketing of food and drinks, with results from the survey, supporting this attribution of responsibility.  The food industry was deemed to have the third greatest responsibility (after parents and adolescents) for preventing excess weight.  Greater division and variation in beliefs however were evidenced both within and across the study phases regarding the government’s role in and responsibility for obesity prevention.  Concerns were raised in the qualitative data regarding whether governmental involvement in tackling obesity would reduce personal responsibility and foster a ‘nanny state’. In contrast, support for increased governmental action was also advocated in interviews, on the justification of the national scale and significance of the public health challenge (Brownell et al., 2010).  This contested position was evidenced in the quantitative phase, where the government was deemed to have the least responsibility out of the key stakeholders listed.  For those proposing the appropriateness of state involvement, participants’ perceived value in the government’s ability to enhance public awareness, regulate private industry and utilise legislation and taxation as a means to influence population behaviour (Jebb et al., 2013).

Whilst not as contentious as the food industry and government, the responsibility and role of secondary schools in obesity prevention remained contested for headteachers and chairs of governors across both research phases.  Participants broadly supported the concept that schools are an appropriate setting for preventing obesity and should play an active role in improving adolescent lifestyle behaviours (Bonell et al., 2014; Langford and Bonell, 2015; Wang et al., 2015). They perceived schools could and should provide health education (i.e. through PHSE) and opportunities to enhance health (i.e. through healthy school catering, extra-curricular activities).

However, as discussed in the qualitative phase and supported by earlier studies (Clarke et al., 2015; (Clarke et al., 2015; Christian et al., 2015; Howard-Drake and Halliday, 2015; Todd et al., 2015), given the identified social and environmental influences on adolescent lifestyle behaviours, schools were argued to hold only part responsibility. As evidenced in the quantitative phase, this was argued to be notably less than other key stakeholders (i.e. parents, adolescents).  Quantitative results indicated greater attribution of responsibility to primary rather than secondary schools, which could in part be due to the opinion shared during interviews that earlier intervention in obesity prevention is more effective (Sharma, 2006).  Whilst evidence supports this position (Waters and Silva-Sanigorski, 2011), it has been argued to be unjustified (Williams and Henley, 2013; Langford and Bonell, 2015), given that adolescence provides critical windows of opportunity to influence physical activity and dietary behaviour (Crone and Dahl, 2012; Hagell et al., 2015).

Polarised beliefs about responsibility for obesity identified in this research, is reflective of the complex discourse evident in academic literature (Brownell et al., 2010).  Narratives portrayed in the media and academic research surrounding responsibility for obesity and health more broadly, often centre on two simplistic and conflicting views - either individuals or society are responsible for the existence of excess weight (Wikler, 2002; Kim and Anne Willis, 2007; Roberto et al., 2015). Whilst the qualitative findings identified an understanding of the importance of collective responsibility (Christian et al., 2015), survey results indicated that the vast majority of headteachers and chairs of governors still broadly deem parents and adolescents to have more responsibility than schools, government and society as a whole.  This attribution of personal responsibility could reflect more broadly, participants’ support of a libertarian worldview or belief system (Purcell, 2010).

The belief at both a secondary and primary school level (Clarke et al, 2015; Howard-Drake and Halliday, 2015 and Todd et al, 2015), that personal responsibility is valued and the main responsibility for preventing childhood and adolescent obesity lies outside of educational settings, could impact upon schools engagement in public health policy.  Furthermore, it also indicates a disparity exists between recent national policy direction and the perceptions of the school stakeholders tasked with implementing key actions.  A search of terms in the childhood obesity action plan (HM Government, 2016), identifies 61 references to ‘schools’ (mainly primary), compared to 22 for ‘parents’ or ‘families’ and 17 for ‘industry’ or ‘businesses’.  For headteachers and chairs of governors, this potentially disproportionate focus, could prevent a barrier to engagement.  It is imperative therefore, that public health policy and action facilitates shared responsibility for addressing the drivers of obesity and a collaborative approach to implementing preventative solutions.

9.3.1.4 The ‘ladder’ of preventative interventions

When considering what preventative solutions level would be effective, headteachers and chairs of governors in the qualitative phase proposed a range of behaviour change interventions, both inside and outside of the secondary school setting. These interventions, could be identified as ranging from policies which encouraged personal autonomy (e.g. delivering education in schools), to government mandated approaches for changing behaviour (e.g. use of legislation, regulation and taxation).

The ‘Intervention Ladder’ (Nuffield Council on Bioethics, 2007), provides a useful way to reflect on this finding. The interventions or action advocated by headteachers and chairs of governors at a school or societal level can be viewed in relation to a particular rung of the ladder (as presented in figure 9.2). The higher up the rungs on the ladder of interventions, the greater restriction on individual choices occurs (Nuffield Council on Bioethics, 2007).

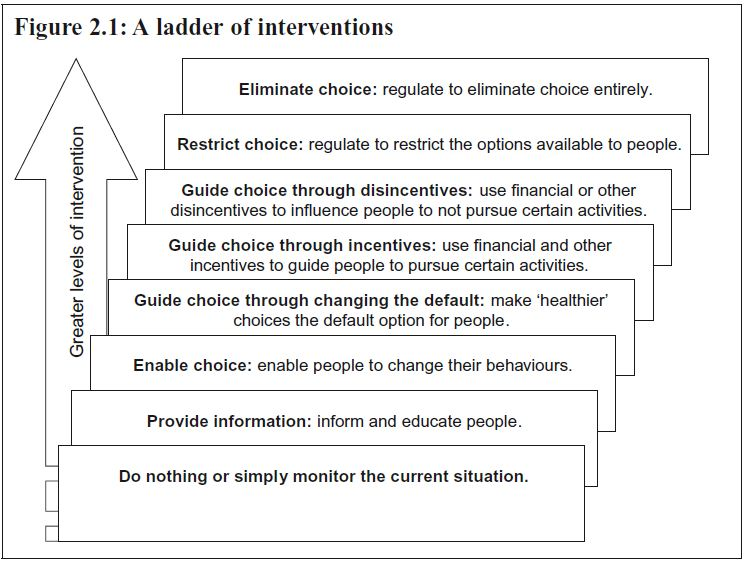


Figure 9.2 - Nuffield Intervention Ladder (Nuffield Council on Bioethics, 2007)

Across both phases, education in schools and public health awareness campaigns as a means to change adolescent lifestyle behaviours gained the greatest support from participants. Furthermore, school action which enabled or restricted choice (i.e. by providing health enhancing opportunities or limiting behaviours deemed unhealthy) were strongly advocated. In contrast, the use of incentives or disincentives for influencing adolescent lifestyle behaviour within school settings was not referenced in the qualitative phase or evident in responses to open questions in the survey.

Whilst the restriction of choice within secondary school settings was broadly promoted (i.e. through a locked-gate policy or ban on particular foods), the concept of restricting choice at a societal level was more controversial. Recognition was apparent, across both phases, of the complex social and environment factors influencing obesity. Despite this, study participants were found to generally favour individual behavioural interventions as opposed to system level approaches, i.e. lower on the Nuffield intervention ladder. The use of legislation/regulation and taxation to restrict or eliminate choice remained the most contested and divisive of preventative interventions.  This dichotomy regarding people recognising complex causation, yet advocating for individual solutions for obesity, was evidenced in previous research in the UK, with overweight individuals, health professionals and policy makers (Greener et al., 2010).

Due to the paucity of literature exploring headteachers’ and chairs of governors’ views on obesity and its prevention, it is not possible to draw conclusions as to whether views regarding behaviour change interventions resonate outside of this research context.  In spite of this, findings do appear to be consistent with wider literature, which identified that in the UK, *“people are less likely to support government interventions that restrict personal choices (e.g. banning unhealthy foods), but more likely to support healthy lifestyle campaigns and voluntary food labelling”* (Kraak et al., 2014, p.213).  Furthermore the study supports the theory that attribution of responsibility influences individuals proposed solutions for public health challenges (Brownell et al., 2010). This is reflective in the fact that participants who advocated for collective societal responsibility justified legislation as a means to make a meaningful difference to the health outcomes of children and adolescents (Nuffield Council on Bioethics, 2007).  In contrast, those who had previously advocated for greater personal responsibility, appeared to view rungs higher up the ladder of intervention, e.g. the sugar-tax levy (HM Government, 2016), as disproportionately intrusive (Krakk et al., 2014).

Given a school’s fundamental purpose is the education of children and young people (The Rt Hon Nick Gibb MP, 2015), and the previously identified support for personal responsibility, it is perhaps unsurprising that headteachers and chairs of governors attributed greater value to interventions which inform and educate.  However, evidence has questioned the effectiveness of health education, increasing awareness and individual behaviour change interventions alone for addressing obesity (Story et al., 2009; Jebb, 2014).  Furthermore, it has been argued that utilising these approaches without a combination of structural and system wide interventions, inadvertently widens inequities and health inequalities for low-income groups (World Health Organization Regional Office for Europe, 2014; Mantziki et al., 2016).

Findings from this study therefore suggest that unless obesity is truly framed and understood as multicausal by all key stakeholders involved in obesity prevention, it is unlikely that the necessary public support will be obtained for the system level policy interventions required to meaningfully address excess weight (Brownell et al., 2010).

9.3.1.5 The secondary schools role

In spite of the variation in the proposed preventative solutions for obesity, this study found that headteachers and chairs of governors believe that secondary schools should play a role in prevention and believe schools are able to positively influence adolescent lifestyle behaviours.  Furthermore, survey participants were broadly supportive of statements from the NICE obesity prevention pathway referencing specific responsibilities of headteachers and chairs of governors (National Institute of Health and Care Excellence, 2015a).  The advocated role of schools in the prevention agenda, is a finding echoed by earlier studies regarding the views of primary school headteachers in the UK (Clarke et al., 2015; Howard-Drake and Halliday, 2015; Todd et al., 2015).

In addition, although participants strongly emphasised the value of health education, it was identified that a variety of interventions and action contributing to the obesity prevention agenda are delivered in secondary school settings. Furthermore, these are reflective of the ‘Health Promoting School’s framework’ (World Health Organization, 1986a; Langford and Bonell, 2015; Langford et al., 2017)  Interestingly, chairs of governors appeared to have less knowledge of or involvement in school action contributing to obesity prevention compared to headteachers.

Furthermore, headteachers clearly identified themselves as the key decision maker, determining a school’s priorities and activity.  This finding could be significant, given that the NICE obesity prevention pathway identifies the importance of both roles (National Institute of Health and Care Excellence, 2015a).  It may therefore be conducive for public health specialists to foster greater engagement with secondary school headteachers given the reported internal decision making dynamics.

For most preventing excess weight was generally not found to be an explicit priority or school policy focus, however this study similarly to earlier research with UK primary school headteachers (Clarke et al., 2015; Howard-Drake and Halliday, 2015), found that secondary schools prioritise the improvement of pupil’s dietary and physical activity behaviours.  This was reported in both research phases, where participants confirmed that their school provides and promotes opportunities both in the curriculum and wider school environment, for pupils to learn about and engage in healthy lifestyle behaviours.  Furthermore, the provision of extra-curricular activities especially related to physical activity were deemed commonplace, and a commitment to creating a healthy food environment was apparent.  Driving this action and reflective of extensive research was the understanding that a reciprocal relationship exists between lifestyle behaviours, health and educational outcomes (Bonell et al., 2014; Langford and Bonell, 2015; Kim et al., 2016).

Despite the importance placed on this symbiotic relationship (Public Health England, 2014c), significant barriers was argued to exist, which hinder a state funded school’s willingness to improve pupil lifestyle behaviours and prevent obesity. These barriers relate to increasing pressure and accountability on academic performance and financial budgets.  In support of earlier studies (Nollen et al., 2007; Tripp and Choi, 2014; Clarke et al., 2015; Howard-Drake and Halliday, 2015; Todd et al., 2015), this study found the belief that although schools are deemed to have a moral obligation to develop the ‘whole child’ (inclusive of adolescent health and well-being), increasing governmental focus on educational outcomes and reducing resources substantially affects their ability to do so.  Bonell et al., (2014) supports this belief, and argues that the escalating government prioritisation of academic achievement in school settings across primary and secondary schools, has resulted in health and well-being being increasingly ignored at a policy level in England.

Consequently, and crucially for public health policy was the argument by participants, that anything outside of a school’s core purpose, that doesn’t contribute to activity monitored by Ofsted was difficult to action or prioritise. Obesity prevention was deemed to be no exception.  This perception was a recurrent theme in previous research into UK primary school headteachers’ perspectives on childhood obesity (Clarke et al., 2015; Howard-Drake and Halliday, 2015).  Although originally and universally supported by state funded schools in the qualitative phase, interestingly a lesser strength of opinion was evident in the quantitative phase, with 60% of participants deeming government’s focus on academic progress was a barrier.  Furthermore, despite the reference to Ofsted’s proposed involvement in a new voluntary health rating scheme for primary schools (HM Government, 2016), the concept of increased accountability for preventative action in schools was contested across the phases.  In the qualitative phase, most participants perceived the lack of accountability from Ofsted for preventative action was a barrier, given that ‘what gets measured gets done’. This was not supported in quantitative phase, especially by headteachers.

Despite the identified barriers associated with competing priorities, headteachers and chairs of governors proposed enabling factors, which could facilitate a school’s continued engagement in preventative action.  Resonating with earlier studies into headteachers’ perspectives (Clarke et al., 2015; Christian et al., 2015; Howard-Drake and Halliday, 2015; Todd et al., 2015), was the belief identified in the qualitative phase that headteachers’ values or attitudes had substantial influence in creating a school culture and ethos where health and well-being is promoted.  Despite this, a marginal majority of survey participants did not agree that they had responsibility for prevention or could actually direct the school to take preventative action.

An additional enabling factor for school based prevention and again reflected in previous research identified in the systematic review and qualitative synthesis (Clarke et al., 2015; Howard-Drake and Halliday; 2015), was the importance participants attributed to engaging with multi-agency partners.  Whilst not necessarily perceived to have direct responsibility for obesity prevention, key partners including school nursing services, were deemed to be instrumental in enhancing the capacity, credibility and consistency of health promotion messages (both inside and outside of a school setting).  A caveat was, however issued with this opinion. Despite the perceived value of multi-agency partnerships, participants proposed that a current lack of funding and disparate priorities across health and education sectors, is hindering the effectiveness of obesity prevention (Clarke et al., 2015; The King’s Fund, 2016, 2017; Times Educational Supplement, 2017). This study therefore found a demand by headteachers and chairs of governors, for greater governmental resources and support to develop connected and sustainable public sector partnerships that will have a meaningful reduction on population level obesity.

The last main finding identified within this study, relates to the concept of role modelling.  In support of existing literature (Story, 1999; Yager and Dea, 2005; Yager and O’Dea, 2010), it was deemed important that school staff role model healthy lifestyle behaviours in school settings to children and adolescents.  This was due to the belief expressed and similarly shared with headteachers in UK primary schools (Clarke et al., 2015; Howard-Drake and Halliday, 2015), that the behaviour of school staff and headteachers themselves can positively or negatively influence adolescent lifestyle behaviours (Koehly and Loscalzo, 2009). Consequently, in spite of not being perceived by the majority of survey participants as a barrier to obesity prevention in schools, in both phases of the research, it was argued that school staff should role model healthy lifestyles to pupils.

For headteachers and in chairs of governors in the qualitative phase, the argument for positive role modelling was based on the concept, that the credibility of healthy lifestyle messages promoted within the school environment are reinforced.  Despite the strength of opinion regarding this finding, interview participants felt conversations with school staff about role modelling, especially in relation to their weight status was difficult. This was attributed to the sensitivity and contentious nature of obesity (Puhl and Heuer, 2010) and the risk of causing discrimination or stigmatisation (MacLean et al., 2008).

**9.4 Strengths and limitations of the study**

9.4.1 Strengths

This study is the first study to have exclusively explored the perspectives of secondary school headteachers’ and chairs of governors’ regarding adolescent obesity and its prevention. Furthermore, this is the first study related to headteachers’ and chairs of governors’ perspectives on obesity, that has adopted a mixed methods approach and design.  The originality of the research therefore is a significant strength of this doctoral study.

In relation to the research approach and design, the combination of qualitative and quantitative approaches to collecting and analysing data is a positive attribute of the current research, given the argument that mixed methods *“draw from the strengths and minimise the weaknesses”* of single quantitative or qualitative research studies (Johnson and Onwuegbuzie, 2004, p.14). An exploratory sequential design was particularly useful for this study given the lack of existing relevant literature.  By conducting a qualitative exploration in the first and core phase, the resultant findings could be utilised to develop an appropriate data collection tool for use in a quantitative phase with a larger sample of participants.  The combination of phases, enabled a more comprehensive understanding of the topic under study to be achieved, than would’ve been obtained in a single method study.

The researcher adopted the ‘Good reporting of a Mixed Methods Study’ (GRAMMS) approach to appraising research quality in mixed method study designs (O’Cathain et al., 2008).  This is a strength of the overall thesis, as committing to GRAMMS provided a recognised framework, which enabled the decisions employed regarding the design and implementation of this mixed methods study to be robust, justifiable and explicit.

A further strength of the study was deemed to be the researcher’s professional experience in engaging with schools.  Insights gained from the researcher’s previous direct involvement with the population of interest (i.e. headteachers and chairs of governors), informed the study design and assisted in establishing rapport with participants in the qualitative phase.  This was deemed to enhance the quality of the interviews undertaken and the meaningfulness of the data obtained.  Furthermore, as a Registrar in Public Health, the findings, interpretations and more specifically recommendations were grounded in the knowledge and experience of the real world of childhood and adolescent obesity prevention.

Lastly, a substantial advantage for this study, was the guidance and advice provided by the researcher’s two supervisors. This was especially important given the researcher’s novice status and limited previous experience of conducting primary research.  The support received from each supervisor throughout was therefore invaluable and assisted in the researcher overcoming various intellectual, academic and practical challenges during the three year period.  In addition, the credibility and integrity of the study was enhanced by engaging with academic experts on areas where the researcher had no prior knowledge or experience (i.e. conducting a systematic review, employing mixed methods designs and analysing statistical data).

9.4.2 Limitations

A number of limitations were identified both related to the study as a whole and to the distinct qualitative and quantitative phases of the research.

A major consideration for employing an exploratory sequential mixed methods design, is the potential for researcher bias to have been introduced throughout the process of designing the study and collecting and analysing data (Creswell and Plano Clark, 2011; Creswell, 2014).  It is important to reflect on whether and how the researcher’s prior knowledge, beliefs and experiences, influenced both the process of designing the study and the collection and analysis of data.  This is of particular relevance to the first phase of the study, where the inherent subjective nature of qualitative research makes researcher bias an inevitable limitation (Shenton, 2004; Morrow, 2005).

Three key issues related to researcher bias were reflected upon during the process of conducting the doctoral study.  Firstly, due to time constraints identified by participants, the researcher did not utilise respondent validation (Kuper et al., 2008), during any aspect of the qualitative research phase.  This would have provided participants the opportunity to read and comment on the typed transcripts, resultant themes and draft findings report, confirming whether their perspectives were accurately captured and interpreted.

Secondly, the researcher's professional role (as described in chapter 1), required engagement with schools across one of the chosen local authorities.  Consequently, of the 22 participants interviewed, the researcher knew of three within a professional capacity.  It is therefore important to acknowledge that this could have influenced the responses those participants provided, i.e. providing socially desirable answers.  An additional consideration is whether and how the researcher’s analysis of those three interview transcripts was in any way different to the remaining nineteen.

Thirdly whilst utilising qualitative findings to develop a quantitative instrument is advocated for enhancing internal validity and reliability (Creswell and Plano Clark, 2011), this approach is open to researcher bias.  For example the researcher’s personal choices determined which elements of the qualitative findings report to include in the questionnaire content, how to word the statements and what measurement scale to employ.  Consequently, the internal validity of the integrative process could have been strengthened by respondent validation and also verification by another researcher.

Despite the inability to remain completely objective throughout the process of conducting the mixed methods study, the researcher did commit to employing a reflexive approach.  By clearly articulating the researcher’s position, using a reflective journal and engaging consistently in a critically self-reflective manner with academic supervisors, the researcher attempted to account for and minimise any identifiable biases.  Furthermore, the researcher undertook a series of robust and explicit methodological steps during both phases, which were informed by extensive reading of relevant literature and engagement with academics from across the world.

An additional limitation, which is important to reflect on, is the potential impact of a participant’s weight status or the weight status of their children and family on the responses provided (during either the interviews or the survey). A small minority of participants in the qualitative phase did reflect on their own health, including issues related to weight and lifestyle behaviours. It is therefore appropriate to suggest that a participant’s personal experiences related to the topic under study could have influenced how they answered each of the questions posed by the researcher. This is especially relevant given the highlighted sensitivities and complexities of obesity as a public health issue.

A final consideration to note potentially affecting both phases of the research, was the public profile of obesity during the time of data collection. The release of the national childhood obesity plan (HM Government, 2016), meant that prior to, at the point of and post its launch in August 2016, there was a significant increase in mainstream and social media attention on childhood obesity. It is important therefore to acknowledge that this heightened reporting regarding childhood obesity and the national plan, could have influenced both participants willingness to take part in the research and the resultant perspectives shared.

*Qualitative phase*

A limitation specific to the qualitative phase, relates to selection bias.  Non-probability purposive sampling was utilised to recruit participants from specific local authorities in England.  Whilst this approach to sampling was a deliberate methodological choice, it is implausible to claim that the resultant sample of 22 was representative of all secondary school headteachers and chairs of governors in England.  As a result, it is equally impossible to state that the perspectives obtained from the interviews can be generalised to the wider population under study.  Despite these limitations, the qualitative phase was exploratory, with the aim of obtaining an in-depth and contextually rich understanding.

The qualitative sample was overrepresented by schools with a higher pupil disadvantage than the national average.  It is important to reflect that this could have disproportionately added weight to arguments surrounding the influence and impact of deprivation both in the reported and interpreted findings.  Furthermore and relevant for the quantitative phase, is the recognition that there is an inherent selection bias regarding those who agree to form the final study sample.  It is not possible to identify what their motivations were for participating or indeed whether or what pre-conceived perspectives existed prior to being interviewed or indeed surveyed.

*Quantitative phase*

The most significant limitation of the quantitative phase of the study concerns the extremely low response rate of the survey (2.8%) and therefore the generalisability of the questionnaire data. Furthermore, due to receiving anonymised responses, the researcher is unable to confirm if survey participants represented the same school (i.e. a school’s headteacher and chair of governors both completing the questionnaire). There is the possibility therefore that the final sample of 127 participants actually reflects a smaller number of secondary schools and could further limit the generalisability of the quantitative results.

Despite the researcher committing to a range of strategies to improve the response rate, a range of factors were identified, which could have significantly impacted the resultant rate achieved. Broadly speaking the use of an online questionnaire instead of a postal data collection method is associated with lower response rates (Bryman, 2012).  Furthermore, the lack of monetary or non-monetary incentive, the inability to completely personalise the emails and the purely textual (rather than pictorial) email could’ve all limited the potential number of responses received (Edwards et al., 2009).

Additionally to these broader factors, specific aspects of the recruitment of survey participants and the data collection methods were viewed as possibly impacting upon the response rate of the survey.  Potentially the most crucial limitation of the data collection method was the inability of the researcher to ensure the email participant request was a) sent to the correct person, i.e. school headteacher and chair of governor and b) opened at all.

The mail merge software utilised provided a tracking report for each of the three distributed emails (original request and two subsequent reminders).  All tracking reports obtained consistently confirmed that on average (across the three distributions), 13.8% of emails sent to the database of schools were not opened and 3.7% of emails sent were opened and the survey link contained clicked.  Below provides the open and open/click percentages for each of the three distributions:

* 1st distribution (original) - 17% opened, 3.5% opened and clicked and 1% bounced
* 2nd distribution (1st reminder) - 19.5% opened, 4.8% opened and clicked and 1% bounced
* 3rd distribution (2nd reminder) - 5% opened and 2.8% opened and clicked (0% bounced)

Whilst a small minority of the publically available email addresses detailed in the EduBase database were that of a school's respective headteacher, the vast majority were generic administrative email addresses.  This means that in the main, the person receiving the original or subsequent email reminders wouldn’t have been the potential participant.  An important determining factor affecting the response rate therefore would have been whether the person who identified the email decided to open the email or as the email requested to forward it to the school’s headteacher and chair of governors.  Consequently it is difficult to ascertain whether a higher response rate would have been achieved if headteachers’ and chairs of governors’ email addresses were publically available and the emails were sent directly to these intended recipients.

A further limiting factor potentially contributing to the low percentage of emails opened and ultimately the overall response rate, was the issue that certain schools employ the use of an email management system to reduce unsolicited emails from third parties.  A small number of potential participants did in fact decline participation, on the basis of the frequency with which research participation requests are made to schools.  Whilst notifications were received from some schools reporting that an email management system was in use, it is not possible to ascertain the proportion of emails that didn’t reach the intended email inbox.

Having opened the email, ten potential participants emailed the researcher to decline the request with each detailing a number of reasons for their decision.  Whilst not representative of all reasons for declining participation, they do offer potential insight into the disparities between the average proportion of emails opened (13.8%), the proportion of emails opened and subsequently clicked (3.7%) and the actual resultant responses received (2.8%).

For those confirming their decision to decline, the following reasons were given:

* Lack of time to complete the survey
* Personal or school policy was to not participate in research given the volume of requests received
* Lack of knowledge or opinions on the topic (i.e. adolescent obesity)
* Adolescent obesity wasn’t perceived to be an issue within their school so felt the survey wasn’t relevant for their setting
* Their school catered for up to 12 year olds only (i.e. the lower end of secondary school age), with the majority of their pupils of primary age, so they viewed it inappropriate to respond

A greater number of questionnaire responses would have undoubtedly allowed a more in-depth analysis of the data, which could have in turn revealed patterns in the data that weren’t identified in the current findings. Furthermore, an increased response rate would have supported the researcher’s ability to generalise the findings to the wider population of interest.  With a response rate of 2.8%, it is not possible to make any claims regarding the generalisability of the results beyond the participants who formed the final study sample (Gillham, 2000).

Despite this, the researcher as identified in chapter 7, clearly anticipated that a low response would be achieved.  Consequently, it was never the intention nor the ambition to achieve a representative sample of participant views in order to generalise the results obtained.  Instead the survey was undertaken to identify whether the core qualitative findings had relevance beyond their original contexts.  In spite of the limitations of being non-generalisable, the findings and conclusions of this research still provide a significant empirical contribution into the perspectives of headteachers’ and chairs of governors’ regarding adolescent obesity and its prevention in secondary school settings.

An additional limitation related to the quantitative phase, centres on the questionnaire content itself and issues of response and recall bias.  Despite assurances regarding anonymity and due to the sensitive nature of the topic under study, i.e. adolescent obesity, it is plausible that participants provided answers that they deemed to be professionally or personally correct.  In addition, the wording of particular statements (i.e. positive or negative terminology), could have provoked participants to respond with the ‘correct’ answer that they perceived the researcher was expecting.  The issue of recall bias is a further consideration in relation to the obtained responses.  Answers to various questions and statements required participants to recall information, e.g. estimating the prevalence of obesity in school pupils or the confirming the existence of a particular preventative action.  It is important therefore to reflect that whilst the answers are interesting and useful, there is the potential for inaccuracies in the answers provided.

Lastly, within the questionnaire a Likert scale for one set of statements was incorrectly labelled. The usefulness of this question was therefore significantly limited given that it was not possible to accurately identify the frequency or proportions of the responses received for each statement.  Furthermore, this issue meant that inferential statistical analysis could not be undertaken, and consequently relationships between variables of interest were unable to be examined.  In spite of this, an open text box was provided enabling insightful comments to still be obtained.

**Chapter 10**

**Conclusions, recommendations and dissemination**

This chapter provides a final conclusion to the findings discussed, and proposes its significance and empirical contribution to the evidence base. Recommendations are then proposed for both public health policy and practice, along with recommendations for future research.  Finally, the chapter concludes with the plans for disseminating the findings of the study and a concise overarching summary.

**10.1 Conclusion**

In conclusion, findings from this study indicate that whilst headteachers and chairs of governors recognise a growing problem of obesity within society, generally they do not believe this to be an issue for adolescents within their secondary school setting. Despite this, headteachers and chairs of governors were concerned about a perceived increase in unhealthy dietary habits and sedentary behaviour in their pupil population.

Obesity was viewed as a complex and sensitive public health challenge, with headteachers and chairs of governors proposing multiple and interrelating factors affecting the dietary habits, physical activity behaviours and resultant weight status of adolescents. In particular, factors within the home environment and wider food environment were deemed to significantly influence an adolescent’s ability and desire to achieve and maintain a healthy weight. In each of these environments, the issue of low income was broadly perceived to compound the problem of obesity, with excess weight and unhealthy lifestyle behaviours deemed to be disproportionately associated with deprivation.

Despite the identified multi-causal nature of obesity, headteachers and chairs of governors attributed primary responsibility for its prevention to parents and adolescents themselves. Other key stakeholders were proposed as needing to play an important role, namely the food industry, schools and the government, albeit this was more contested given the concern surrounding the creation of a ‘nanny state’. Consequently, as opposed to societal-wide interventions, most headteachers and chairs of governors placed greater emphasis on the importance and value of individual behaviour change approaches for preventing obesity both inside and outside of the school setting.

Preventing adolescent obesity was in the main not an explicit priority for secondary schools and their key decision makers. However headteachers and chairs of governors did acknowledge secondary schools are an important setting for improving adolescent lifestyle behaviours and consequently the prevention of excess weight. This acknowledgement, in addition to the recognition of a reciprocal relationship between lifestyle behaviours and academic outcomes, meant that improving adolescent dietary habits and the uptake of physical activity was a secondary school priority.

Headteachers and chairs of governors confirmed the existence of preventative action in secondary school settings, which mainly centred on the provision of health education and opportunities for adolescents to engage in healthy lifestyle behaviours (e.g. through school sport and healthy school food). In addition, school policies were identified that restricted particular dietary behaviours (e.g. consumption of energy drinks) or the ability for adolescents to access unhealthy food and drinks outside of the secondary school setting (e.g. ‘locked gate’ approach at lunch times).

In spite of a general willingness and desire by headteachers and chairs of governors to improve adolescent lifestyle behaviours, significant barriers were perceived to exist within secondary schools, which affect their ability to do so. Of pressing concern was the belief that increasing governmental pressure on academic achievement and reducing financial resources, means secondary schools are unable to undertake meaningful and sustainable action, on a wide range of adolescent health and well-being issues, including obesity. Additional challenges for school based preventative action were proposed as poor role modelling amongst school staff and the depletion of capacity within key obesity stakeholders (e.g. school nurses), who are viewed as able to support school-based obesity prevention.

In order to facilitate a secondary school’s ability to prevent obesity, headteachers and chairs of governors advocated for additional funding and resources from government and greater support from external partners (e.g. public health organisations). Furthermore, given the perception that the causes of and responsibility for obesity lay primarily outside of a school setting, headteachers and chairs of governors promoted the importance of future public health action and interventions to be delivered across a variety of settings (e.g. family and community). This was viewed as crucial in order to enhance the visibility and consistency of obesity related public health messages in schools, families and adolescents themselves.

**10.2 Contribution of the study**

This mixed methods study is the first of its kind.  The role of schools remains a focal point for national guidelines to improve healthy lifestyle behaviours and prevent childhood and adolescent obesity (National Institute of Health and Care Excellence, 2015b; HM Government, 2016). Furthermore headteachers and chairs of governors are explicitly referenced as being required to drive this action within school settings (National Institute of Health and Care Excellence, 2015a). Despite this, and as evidenced in the conducted systematic review and qualitative synthesis, no research to date in the UK had been undertaken, which explored or investigated secondary school headteachers’ perspectives on adolescent obesity.  Furthermore, no national or international study could be identified, which included chairs of governors perspectives’ at any school level regarding childhood or adolescent obesity. This doctoral study and the identified findings, therefore fills a significant gap in the evidence base and provides a unique and valuable empirical contribution to the understanding of whether, how and why these key crucial school stakeholders engage in the prevention agenda.

The use of a mixed methods design, with two complementary phases provide strong evidence for the conclusions made, and whilst it is not possible to generalise the findings, they still present important implications and recommendations for public policy makers and professionals who are currently engaged in the obesity prevention agenda with school settings.

**10.3 Recommendations for public health policy and practice**

Of significance for public health policy makers and professionals is the acknowledgement by the key decision makers in secondary schools that whilst not an explicit priority, their setting is important for the prevention of adolescent obesity and therefore should play a role in delivering preventative action. Given the specific focus of schools in the national childhood obesity plan (HM Government, 2016), this finding indicates that opportunities may exist for public health professionals to foster meaningful engagement with those tasked with leading on school based prevention. Furthermore, the recognition by headteachers and chairs of governors that a reciprocal relationship exists between adolescent lifestyle behaviours and academic outcomes provides an important leverage point with secondary schools, for promoting the value of embedding preventative action.

However, a critical recommendation resulting from this research is the need for public health policy makers and professionals, to understand the significant barriers impacting headteachers’ and chairs of governors’ ability and desire to engage in the obesity prevention agenda. Despite arguably being well positioned to improve adolescent lifestyle behaviours and prevent obesity, it is perhaps misguided to expect they have the necessary awareness, skills, capacity and resources to do so. Consequently, this research recommends that when developing policy actions for school based obesity prevention, public health policy makers proactively engage with the key decision makers of secondary schools. Instead of being simply vehicles for interventions, secondary schools and their respective leaders and governors should become active partners involved in the front end of public health policy making. By doing this and understanding the unique challenges and opportunities that exist within secondary school settings, the effectiveness and sustainability of future preventative action could be maximised.

One recommendation for potentially fostering greater engagement with secondary schools on obesity prevention, centres on reducing the identified disparity between the perception and reality of the problem. Findings from this study indicated that despite national evidence to the contrary (NHS Digital, 2016b), headteachers and chairs of governors do not perceive adolescent obesity to be a significant problem within secondary schools. The potential implication of this finding and as supported by the current Head of Obesity Policy at The Department of Health, is that the existence and scale of the problem needs to actually be recognised before it can be prioritised (Sangster, 2016). Therefore, it is important to increase headteachers’ and chairs of governors’ awareness of adolescent obesity prevalence and its associated risks to both health and educational outcomes. A possible mechanism to achieve this, could be through the dissemination of local or regional results of the National Child Measurement Programme to individual schools (NHS Digital, 2016b).

Whilst action was identified within secondary schools contributing to the prevention of adolescent obesity, this could be strengthened in accordance with the WHO Health Promoting Schools framework (Langford and Bonell, 2014, 2015; Langford et al., 2017). Current budgetary pressures and an increasing focus on academic performance in schools, means there is little capacity to prioritise the improvement of an adolescent’s wider health and social outcomes. Consequently and as identified by headteachers and chairs of governors, additional governmental funding, resources and training for preventative action is required within secondary schools.

To facilitate this, an increased partnership approach between policy makers and professionals in public health and education is required. This will enable the reciprocal relationship between adolescent lifestyle behaviours and academic performance (Bonell et al., 2014; Kim et al., 2016) to be truly understood and championed. Furthermore, cross-sector working at both a strategic and operational level would enable knowledge, skills and resources to be shared, potentially resulting in the improvement of both educational and health related outcomes for adolescents. Examples of which include, the provision of public health training to school staff; ensuring key public health messages are delivered in the taught curriculum and PSHE and identifying health enhancing opportunities within the existing school environment.

A final and fundamental recommendation for policy and practice resulting from this research, is ensuring effective public health preventative action is targeted in other settings in addition to schools. Whilst secondary schools do have un-paralleled access to adolescents aged 11 to 16 years and currently contribute to the obesity prevention agenda, the key decision makers believe other settings play a more influential role, namely the home and wider food environment. Furthermore, headteachers and chairs of governors clearly identified that the existence of negative influences on adolescent lifestyle behaviours from these environments are able to undermine school based preventative action.

Consequently, in order to support schools, headteachers and chairs of governors to be able to fulfil their referenced roles (NICE, 2015a; 2015b), wider social and environmental factors causing obesity need to be simultaneously addressed alongside the implementation of school-based interventions. Addressing these factors require public health policy makers and professionals to prioritise preventative action that uses a whole systems approach, promotes collective responsibility and is reflective of the ladder of public health interventions (Butland and Jebb, 2007; Nuffield Council on Bioethics, 2007). Visible and consistent public health information, which educates and informs should be provided across school, family and community settings. In addition, societal-wide approaches, which enable and guide individual choices and behaviours should be employed. Examples of which include public health professionals encouraging local governments to reduce the availability of fast food outlets in close proximity to schools (Public Health England, 2014b) and lobbying national government to restrict junk food advertising to children and young people (The Food Foundation, 2017).

**10.4 Recommendations for future research**

First and foremost, as argued throughout this thesis, there remains a paucity of literature on headteachers’ and chairs of governors’ perspectives on obesity and its prevention in school settings.  The increasing governmental and public health policy focus on the role of schools in addressing obesity during childhood and adolescence, means understanding the views and opinions of key school stakeholders regarding this topic is imperative.  Consequently more research is needed into the perspectives of school leadership and governance at both primary and secondary school levels.  In addition, value would be identified in expanding the scope of future research to include the perspectives of others involved in or engaged with the school based prevention namely teachers, school nurses, parents and adolescents themselves.

The non-probability sampling methods in the qualitative phase and small sample size overall meant that the findings identified from this study are unable to be generalised to the wider population of secondary school headteachers and chairs of governors in England.  It is therefore recommended that in order to allow for more definitive and adequately powered conclusions to be drawn on their views, future research is required that will focus on employing methods to obtain a larger representative sample size.

A further recommendation centres on the potential use of data collection methods to enhance the validity and reliability of research in this area.  Whilst the questionnaire derived from qualitative findings was entirely appropriate for use in this study, an opportunity exists for developing and testing a validated tool for measuring school stakeholders’ attitudes towards obesity and its prevention in childhood and adolescence.

Given the exploratory nature of this study and the broad and diverse range of findings identified, a recommendation would be to examine in greater depth, one of the specific issues theorised in the discussion.  For example, it may be both interesting and useful to investigate the perception of obesity prevalence by key school stakeholders across primary and secondary school settings.  Furthermore, due to the sustained contact children and adolescents have with school staff, exploring the potential influence and impact of role modelling in schools on obesity could provide a unique and valuable contribution to the evidence base.

**10.5 Dissemination of the study findings**

The assertion that the present research is of importance to those engaged in research, policy or practice related to school based obesity prevention, implies that the findings require effective dissemination.  Effective dissemination of study findings is suggested to be a central part of the overarching research process in order to achieve impact both within and beyond academia (Bryman, 2016).  Whilst it remains important to demonstrate that one’s research has made a significant empirical contribution, increasingly a crucial consideration is whether conducted research has an effect on, changes or benefits *"the economy, society, culture, public policy or services, health, the environment or quality of life beyond academia”* (REF, 2011, p.48).

In accordance with the Research Excellence Framework (Research Excellence Framework, 2014), the researcher adopted the understanding that impact can relate to (although is not limited to), affecting, changing or benefiting the attitudes, awareness, behaviour, practice or policy of organisations or individuals in any geographic location.  The main priority was for the researcher to have an effect on the awareness of regional and national stakeholders who were perceived to be able to potentially benefit or have a vested interest in the study findings, namely:

* Participants of the research
* The academic research community
* Leadership and governance professionals engaged in secondary school settings
* Public health specialists
* Policy makers with a remit for school health or obesity prevention

To guide the approach for disseminating the research to the above key stakeholders, the researcher reflected upon the five questions posed within the Impact Planning Toolkit (The University of Sheffield, 2017). Consequently, several actions are planned and are in process of being undertaken at the point of thesis submission in order to effectively disseminate the research:

1. As confirmed to participants during the process of conducting semi-structured interviews, a summary of the study findings will be personally emailed to all those who took part in the first phase of the study.  Furthermore, a brief overview of the study and summary of resultant findings will be distributed to the census of secondary schools (via contact information within the Edubase database).
2. Two separate academic papers resulting from this research are currently being written for submission to peer reviewed journals.  The first paper relates to the conducted systematic review and qualitative synthesis (registered on PROSPERO as of June 2017). The second, details the mixed methods employed and resultant findings obtained for the doctoral study.
3. A brief overview of the study and summary of resultant findings will be sent to the national associations and professional organisations representing headteachers and chairs of governors with a request for dissemination among their members.
4. Upon successful publication in a peer reviewed journal, it is envisaged that a press release will be drafted from the University of Sheffield’s Corporate Communication’s team in order for the findings to be distributed across the regional and national media outlets.  In addition, a copy of the publication will be deposited in the open access White Rose Research Repository.
5. Following the release of the Childhood obesity strategy (HM Government, 2016) the researcher has developed direct communication with the Deputy Director for Surveys and Evaluation at Ofsted.  Given Ofsted’s proposed involvement in school based obesity related preventative action (HM Government, 2016), they have asked that their attention be directed to any published research resulting from this study.
6. Published research findings are planned to be sent directly to the Team leader for Obesity and Healthy weight within Public Health England.
7. The researcher is intending on submitting an abstract to various conferences being held throughout 2018, namely:

* The 20th International Conference on Obesity (May 2018 in London)
* The European Association for the Study of Obesity (May 2018 in Vienna)
* The UK Congress on Obesity (2018 date to be confirmed)
* Public Health England Annual Conference (2018 date to be confirmed)
* The Faculty of Public Health Annual Conference (2018 date to be confirmed)

**10.6 The final word?**

This doctoral study, employed a mixed methods exploratory sequential design to address the following research question:

*‘What are headteachers’ and chairs of governors’ perspectives on adolescent obesity and its prevention in English secondary school settings?’*

The collective findings from the two distinct yet integrated research phases, have provided both comprehensive and illuminating answers to this question. As reflected in the study findings, adolescent obesity and indeed obesity more broadly is an exceptionally complex, sensitive and at times contentious public health issue. Neither obesity causation nor the solutions proposed to address it are straightforward, a recognition shared by headteachers and chairs of governors in this research. However despite this fact and the identified challenges associated with preventing adolescent obesity in secondary school settings, the two key decision makers tasked with leading preventative action still support the prevention agenda.

Consequently and crucially for public health researchers, policy makers and professionals, this means opportunities exist, for developing further understanding and engagement with one of the key national partners in obesity prevention. Perhaps therefore, rather than the first and final word on headteachers’ and chairs of governors’ perspectives regarding adolescent obesity and its prevention in secondary school settings, this research marks the beginning of future conversations.

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**APPENDICES**

**Appendix A** - Review protocol (Systematic review and qualitative synthesis)

|  |
| --- |
| **Background**  Chapter 2 (within thesis) provides a comprehensive background to the review topic under study, both in relation to the scale and severity of adolescent obesity, but also the role and importance of secondary school settings and key school stakeholders in its prevention.  Furthermore, Chapter 2 explicitly justifies that as given their leadership and governance responsibilities, headteachers and chairs of governors play a crucial role in determining whether and how a secondary school engages in preventing obesity in adolescence.  Consequently exploring their views on this topic was deemed of significant importance and forms therefore the central focus of this doctoral research study.  The review question is -  *‘What are headteachers’ and chairs of governors’ perspectives on childhood or adolescent obesity and its prevention in secondary school settings?’* |
| **Aim and Objectives**  Systematically identify and synthesise the research literature concerning the perspectives of headteachers’ and chairs of governors’ on childhood or adolescent obesity and its prevention in school settings.  In order to achieve the overarching aim, the follow objectives are established for this review -   * Define the review scope and develop a review protocol * Undertake a systematic literature search, employing a robust search strategy and searching techniques * Perform screening on the obtained results, ensuring study eligibility against set inclusion and exclusion criteria * Complete a quality assessment of each included study using the CASP tool (Critical Appraisal Skills Programme) for qualitative studies * Undertake data extraction and perform thematic synthesis in order to integrate the findings of multiple qualitative studies |
| **Criteria for inclusion and exclusion of studies**  *Inclusion -*  Setting   * Primary or secondary level schools (i.e. education provision for ages 5-16yrs)   Perspective   * Explicit reference to and inclusion of headteachers’ or chairs of governors perspectives’ (identifiable in both study methods and extractable from findings)   Phenomenon of interest   * Explicit reference to childhood or adolescent obesity (including overweight) * Prevention of obesity   Study types   * Empirical qualitative studies and mixed-methods studies (inclusive of qualitative findings that can be extracted).   Language   * English language studies   *Exclusion -*  Setting   * Pre-school, further or higher education contexts (i.e. education provision for ages <5yrs or >16yrs)   Perspective   * Other school stakeholders’ perspectives without reference to headteachers or chairs of governors, i.e. school nurses, teachers, parents, pupils   Phenomenon of interest   * Dietary or physical activity behaviours only (without explicit reference to obesity or obesity prevention) * Setting specific obesity prevention policies, strategies or interventions * Treatment of obesity   Study types   * Quantitative studies, non-empirical studies, i.e. editorials, non-peer reviewed literature i.e. theses   Language   * Non-English language studies |
| **Types of studies**  As detailed in above inclusion and exclusion criteria |
| **Types of populations**  Perspectives of headteachers’ or chairs of governors’ employed or elected within school settings |
| **Types of interventions or exposure**  N/A |
| **Types of outcome measures**  N/A |
| **Setting/Context**  Primary and secondary schools both within a UK and non UK setting |
| **Search strategy for identification of studies**  Develop a search strategy from the developed SPICE framework.  Employ extensive use of medical/education electronic databases including those utilised for identifying grey literature. Undertake hand searching of citations and references of potentially eligible studies. |
| **Study selection**  Select studies based on explicit inclusion and exclusion criteria.  Present within a PRISMA flow diagram. |
| **Assessment of methodological quality**  CASP checklist of qualitative studies (10 question checklist) |
| **Data extraction**  Utilise data extraction form to guide the capture of relevant data from the included studies and ensure the task was completed in a robust manner, inclusive of  -   * Study details - Author(s), year of publication, study aims/objectives * Study context - Location and setting of study * Study population - Participant information * Study phenomena of interest - Topic of interest * Study methodology - Approaches to data collection and analysis * Study findings - Author interpretations and/or participant verbatim quotes within results section of papers |
| **Data synthesis**  Undertake thematic synthesis based on guidance from Booth et al, 2016 and Thomas and Harden, 2008 |
| **Timeframe**  6 month period - February 2017 to July 2017 |

**Appendix B - Search terms derived from the developed SPICE framework (Booth, 2004)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Setting (S) | **AND** | Perspectives (P) | **AND** | Interest, Phenomenon of (I) | **AND** | Evaluation (E) | Comparisons (C) |
| School\*                           OR  “Secondary school\*”    OR  “High school\*”              OR | Headteacher\*                           OR  “Head teacher\*”                      OR  Head\*                                         OR  Headmistress\*                          OR  Headmaster\*                            OR  School ADJ Head\*                    OR  School ADJ Principal\*              OR  School ADJ Lead\*                     OR  School ADJ Administrator\*     OR  School ADJ Director\*               OR  Governor\*                                 OR  Governance                              OR  “School governor\*”                 OR  School ADJ govern\*                 OR  “Board of govern\*”                  OR  “Chair\* of govern\*”                 OR | Obesity                      OR  Overweight               OR  Obese                        OR  “Excess weight”      OR  “Obesity prevent\*” OR  **“**Body weight”            OR | Perspective\*                    OR  View\*                                 OR  Attitude\*                           OR  Opinion\*                           OR  Belief\*                               OR  Feeling\*                             OR  Understanding                 OR  Experience\*                      OR | N/A |

**Appendix C – Example of search strategy**

Strategy 223993/121

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Database** | **Search term** | **Results** |
| 121 | CINAHL | ((("STUDENTS, HIGH SCHOOL"/ OR STUDENTS/ OR (School\*).ti,ab OR ("Secondary school\*").ti,ab OR ("High school\*").ti,ab) AND ((Headteacher\*).ti,ab OR ("Head teacher\*").ti,ab OR (Head\*).ti,ab OR (Headmistress\*).ti,ab OR (Headmaster\*).ti,ab OR (School ADJ Head\*).ti,ab OR (School ADJ Principal\*).ti,ab OR (School ADJ Lead\*).ti,ab OR (School ADJ Administrator\*).ti,ab OR (School ADJ Director\*).ti,ab OR (Governor\*).ti,ab OR (Governance).ti,ab OR ("School governor\*").ti,ab OR (School ADJ govern\*).ti,ab OR ("Board of govern\*").ti,ab OR ("Chair\* of govern\*").ti,ab)) AND (OBESITY/ OR "OBESITY, MORBID"/ OR "PEDIATRIC OBESITY"/ OR (Obesity).ti,ab OR (Overweight).ti,ab OR (Obese).ti,ab OR ("Excess weight").ti,ab OR ("Obesity prevent\*").ti,ab OR ("Body weight").ti,ab)) AND ((Perspective\*).ti,ab OR (View\*).ti,ab OR (Attitude\*).ti,ab OR (Opinion\*).ti,ab OR (Belief\*).ti,ab OR (Feeling\*).ti,ab OR (Understanding).ti,ab OR (Experience\*).ti,ab) | 30 |

**CINAHL Database Results (Title form only) -**

[1. Obesity prevention in English primary schools: headteacher perspectives.](#1b194b93-bf23-d10f-33ed-6d1143da20e8-1)

[2. Prevalence of postural deviations and associated factors in children and adolescents: a cross-sectional study.](#388a2aa6-6581-1cf5-0fbd-0aa3bdc3d5e9-2)

[3. Guatemalan school food environment: impact on schoolchildren's risk of both undernutrition and overweight/obesity.](#be974bee-fbff-4e88-41cd-3767b14d0083-3)

[4. ¡Miranos! (Look at Us! We Are Healthy!).](#3d61c908-b67e-1f47-72f2-d1a23fe82d58-4)

[5. Exploring primary school headteachers' perspectives on the barriers and facilitators of preventing childhood obesity.](#51cbb657-e19a-6b01-806d-244bd9966808-5)

[6. Teachers' perceptions about children's movement and learning in early childhood education programmes.](#0c133776-426e-6ced-5b8c-00c303e78658-6)

[7. School Social Capital and Body Mass Index in the National Longitudinal Study of Adolescent Health.](#ba7f9e1a-d1ad-70f7-5078-bc844a9e130a-7)

[8. Methodological framework for the ergonomic design of children's playground equipment: A Serbian experience.](#bcafde6b-bc42-96f2-81e1-b2bb298f8080-8)

[9. Awareness of risk factors and warning signs of stroke in a Nigeria university.](#32db4d53-1306-9f24-c4ef-6529b394e68a-9)

[10. A Built Environmental Intervention and a Combination Built Environmental and Cognitive/Behavioral Intervention to Increase Individual Physical Activity in 3 to 5- Year-Old Children.](#eb6c02e9-18bc-d15c-c292-577fe2e3dd6a-10)

[11. Characterizing lunch meals served and consumed by pre-school children in Head Start.](#4cfef503-cf5a-a058-f754-873c1536b403-11)

[12. There Is No Relationship between Academic Achievement and Body Mass Index among Fourth-Grade, Predominantly African-American Children.](#c68aa587-3313-3098-d60b-8fc682f27334-12)

[13. Nutrition-Related Knowledge, Attitudes, and Dietary Behaviors among Head Start Teachers in Texas: A Cross-Sectional Study.](#7198ad2d-6382-d4ba-e8c4-a59db3f2622b-13)

[14. The Effect of Sex and Age on Isokinetic Hip-Abduction Torques.](#3328f8a4-b85b-f9e2-1191-7e3ff77718da-14)

[15. School Administrators' Perceptions of Factors That Influence Children's Active Travel to School.](#e36a09ea-7fc2-aee4-7d02-75811c06d025-15)

[16. Barriers to optimizing investments in the built environment to reduce youth obesity: policy-maker perspectives.](#e67e0e30-594a-f610-2b4b-2ecd0d80c735-16)

[17. Obesity prevention opinions of school stakeholders: a qualitative study.](#c53d3a06-a42d-00b3-2c2b-65d97d91cd15-17)

[18. Long-term process evaluation of a school-based programme for overweight prevention.](#534869e1-45b7-6c37-7cb0-6d75982397be-18)

[19. Qualitative investigation of factors contributing to effective nutrition education for Navajo families.](#ebed726c-ea7a-af9e-7d52-fbe4fce4fdfd-19)

[20. Understanding school-age obesity through participatory action research.](#74103f3f-2231-b92b-21bb-15720a8a37f7-20)

[21. Physical Education Activities Scale: the development of an instrument to measure adolescent perceptions of school physical education activities.](#e71bfeda-d401-dbdc-cd9d-c670274111c8-21)

[22. Obesity prevention in schools: current role and future practice of school nurses.](#d9aac8ae-f17e-4a1f-6add-f25300575ac1-22)

[23. Overweight and lifestyle in ten-year-old children.](#87fb6f3b-ec8d-be6f-8777-9ac7add39e96-23)

[24. The influence of the home, school, and community contexts on childhood obesity: a multilevel study.](#5318503b-2a42-980b-d07d-37cec7d11608-24)

[25. Acceptability of a school-based intervention for prevention of adolescent obesity.](#05365245-feb7-76ae-2b1f-cfd204b4fd2c-25)

[26. A case of menstrually related migraine in a teenage girl.](#e7456dc5-9520-5004-2a0c-213cd71f536a-26)

[27. Promotion of physical activity and healthy food choices was hampered by competitiveness, lack of quality food, easy access to non-nutritious food, and time constraints.](#18275588-403d-611b-fa3c-d8430c1dab0c-27)

[28. School climate and implementation of the Pathways study.](#d558ef20-e1dd-84ea-7b46-014b924e6e3a-28)

[29. Value of health, incidence of depression, and level of self-esteem in low-income mothers of pre-school children.](#55cf711d-099a-b106-1a26-282e437df282-29)

[30. Perspectives of chronically ill adolescents and parents on health care needs.](#35417686-53fa-5932-847b-c49542d50941-30)

**Appendix D – Quality assessment form (based on CASP, 2014)**

**Reference number** –

**Title of article** –

**Author(s)** –

**Year of publication** –

**Journal (volume/pages)** –

|  |  |  |
| --- | --- | --- |
| **Screening question** | **Yes, No, or Can’t tell** | **Comments** |
| *Was there a clear statement of the aims of the research?* |  |  |
| *Is a qualitative methodology appropriate?* |  |  |
| *Was the research design appropriate to address the aims of the research?* |  |  |
| *Was the recruitment strategy appropriate to the aims of the research?* |  |  |
| *Was the data collected in a way that addressed the research issue?* |  |  |
| *Has the relationship between researcher participants been adequately considered?* |  |  |
| *Have ethical issues been taken into consideration?* |  |  |
| *Was the data analysis sufficiently rigorous?* |  |  |
| *Is there a clear statement of findings?* |  |  |
| *How valuable is the research?* |  |  |

**Appendix E – Data extraction form**

**Reference number** –

**Title of article** –

**Author(s)** –

**Year of publication** –

**Journal (volume/pages)** –

|  |  |
| --- | --- |
| *Study aims* |  |
| *Study context* |  |
| *Study population* |  |
| *Study phenomena of interest* |  |
| *Approach to data collection* |  |
| *Approaches to data analysis* |  |
| *Study findings (headings from abstract)* |  |

**Appendix F - Interview Schedule**

Checklist questions –

* What is the participants preferred name?
* Has the participant received the information sheet? Do they have any questions?
* Is the consent form signed and dated by both participant and researcher?

Key information to provide –

* Overview and purpose of the study
* Participant is free to withdraw consent at any stage (including post interview)
* Everything discussed will be confidential and all information collected will be anonymous
* With agreement the interview will last approximately 60 minutes and will be recorded (using a digital audio recorder)
* How the data collected will be stored, analysed, presented and deleted (Post-study)
* Who to contact at Sheffield University to ask questions or make a complaint

Finally, provide an opportunity for the participant to ask further questions before the interview begins and thank them for their time.

**Questions**

Biographical

* Age and length of service
* Tell me about your journey to becoming a headteacher/chair of governor

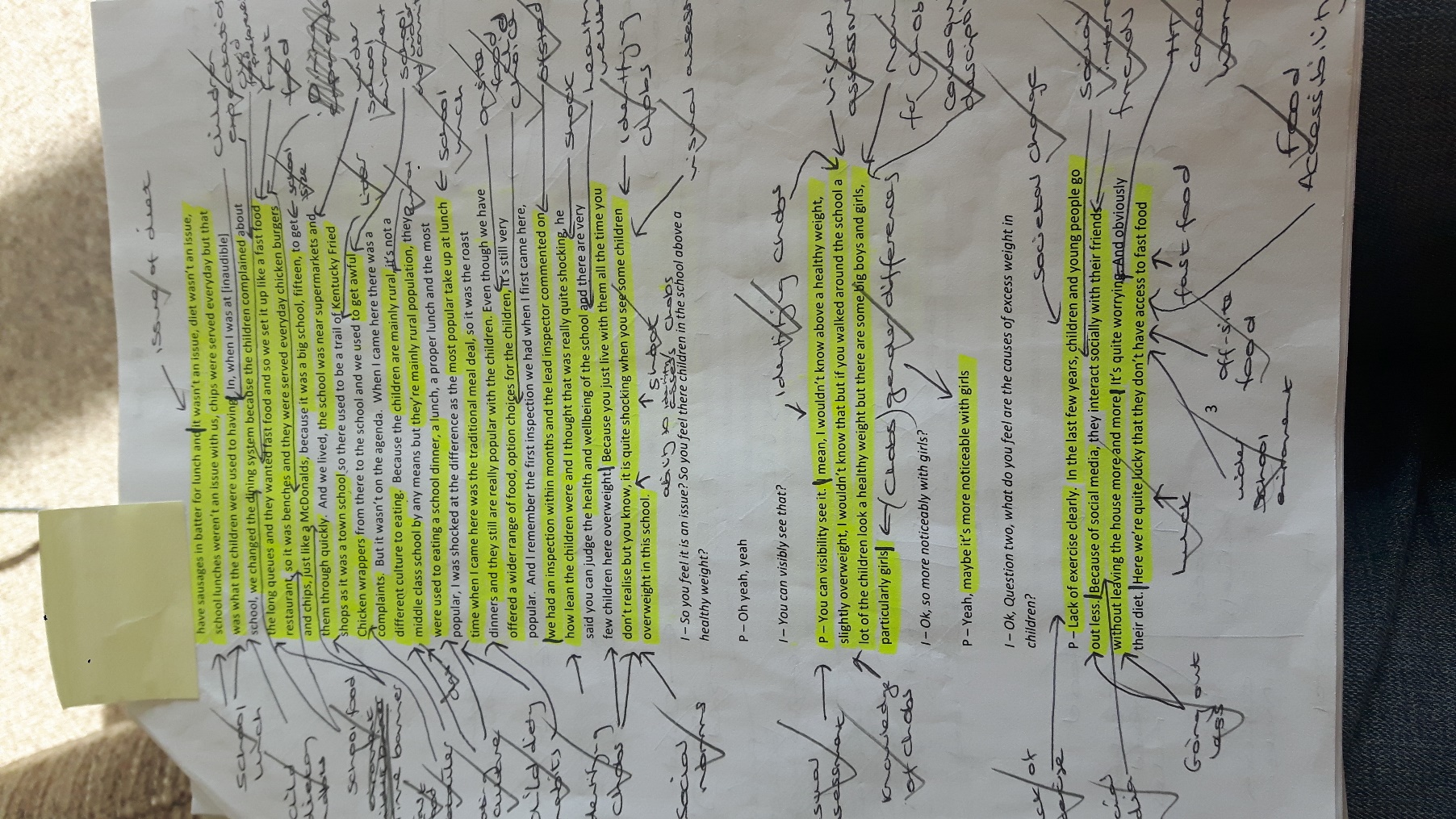
*Prompts – educational background, previous positions, leadership experience*

Main questions

1. Do you feel excess weight in children is an issue in your school? If so, in what way?
2. What do you feel are the causes of excess weight in children?
3. What impact (if any) does excess weight in children?
4. Whose responsibility is it to prevent excess weight in children?
5. What actions and/or activities occur in your secondary school that contribute to the prevention of excess weight in children?
6. What (if any) role do you feel a secondary school specifically plays in preventing excess weight in children?
7. As a headteacher/chair of governors, do you feel you have a role in preventing excess weight in children? If so what role?
8. What barriers affect the prevention of childhood excess weight in secondary schools?
9. What would facilitate your secondary school to take a more active role in preventing excess weight in children?
10. In an ideal world, how could we resolve the issue of excess weight in children?

**Appendix G – Process of hand coding**

As part of the process of thematic analysis (Braun and Clarke, 2006), each transcript was initially coded by hand, using highlights, pens and post-it notes. This assisted in the research getting a physical and visual sense of the data.



**Appendix H - Confirmation of ethical approval from the ScHARR Research Ethics Committee (SREC)**

Approved: 16/12/2015

Emma Howard-Drake

Registration number: 140100743

School of Health and Related Research

Programme: HARR31 Health and Related Research

Dear Emma

**PROJECT TITLE:** English secondary school headteachers' and chairs of governors' perspectives onchildhood obesity and its prevention

**APPLICATION:** Reference Number 006808

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 16/12/2015 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

University research ethics application form 006808 (dated 15/12/2015).



Participant information sheet 1013832 version 2 (15/12/2015).



Participant consent form 1013833 version 2 (15/12/2015).



If during the course of the project you need to [deviate significantly from the above-approved documentation](https://www.shef.ac.uk/ris/other/gov-ethics/ethicspolicy/approval-procedure/review-procedure/changes-made-after-approval) please inform me since written approval will be required.



Yours sincerely

Jennifer Burr

Ethics Administrator

School of Health and Related Research

**Appendix I - Participant Information Sheet**

**Research project title**

*English secondary school headteachers’ and chairs of governors’ perspectives on childhood obesity and its prevention*

**Introduction**

You are being invited to participate in an academic study being conducted by Emma Howard-Drake. This piece of research will contribute to the completion of Doctor of Philosophy (PhD) being undertaken within the School of Health and Related Research at The University of Sheffield.

Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

**What is the project’s purpose?**

This piece of research aims to ascertain what secondary school headteachers and chairs of governors in England perceive of childhood obesity and its prevention. The project is three years in length and it is expected to be completed by Spring 2018.

There are two phases to this research project. The first phase, requires the researcher to conduct 30-40 semi-structured interviews (using either face to face or telephone interviews) with secondary school headteachers and chairs of governors from across England. The results from these interviews, will inform the development of an online survey. Phase two of the project, will require the distribution of the online survey to a nationally representative sample of secondary school headteachers and chairs of governors.

Your participation is sought for the first phase of the research – the semi-structured interviews. Interviews will take place either face to face or via telephone at a date, time (and if relevant a location) convenient to each participant, with each interview lasting approximately 60mins.

**Why have I been chosen?**

You have been approached to participate in this study because your perspectives as a secondary school headteacher or chair of governor would be extremely valuable for this research.

**Do I have to take part?**

It is completely up to you to decide whether or not to take part in this research project. If you do decide to take part you will be given this information sheet to keep and will be asked to sign a consent form. As a voluntary participant, you are completely free and able to withdraw from being involved in the research at any point. You may also choose not to answer specific questions or discuss certain subjects during the interview or ask that portions of our discussions are not recorded. You do not have to give a reason for this or a reason if you withdraw your consent for participation at any point.

**What will happen to me if I take part?**

Whilst this project is three years in length, you would only be expected to participate in the first phase of the research by undertaking one interview. Upon arrival at a face to face interview, the researcher will ask for the consent form to be signed and dated, a copy of this and the participant information sheet will then be provided. If the interview is conducted over the telephone, this process will happen via email. Prior to a face to face or telephone interview commencing, there will be an opportunity to ask any questions about the research project and process. During the interview, the researcher will ask questions related to the research aim and objectives. It is anticipated that each interview will last approximately 60 minutes.

**Will I be recorded, and how will the recorded media be used?**

The interview will be recorded using a digital audio recorder. Audio recordings made during this research will be used only for analysis and no other use will be made of them without your written permission. No one outside of the research project will be allowed access to the original audio recordings. After each interview, the researcher will upload the recording to a secure drive on a password protected computer. The interview will then be transcribed and anonymised. Once transcription has been completed, the audio recording will then be deleted from both the digital recording device and the computer.

**What are the possible disadvantages and risks of taking part?**

It is anticipated that there is minimal (if any) potential disadvantages or risks from taking part in this research project. The only identified disadvantage is any perceived inconvenience of committing your time for participation.

**What are the possible benefits of taking part?**

Whilst there are no immediate and direct benefits for participating in this research, it is hoped that by obtaining the views from crucial school stakeholders (i.e. headteachers and chairs of governors) results from this work will contribute to the valuable evidence base about childhood obesity prevention and school settings.

**What happens if the research project stops earlier than expected?**

If the research project stops earlier than expected, that a full explanation will be provided to each participant.

**What if something goes wrong?**

As a participant, if you are unhappy with how the research has been conducted or would like to raise concerns about your participation in the project, complaints should be directed initially to the researchers lead academic supervisor (see contact details on the last page).

If you feel any complaint submitted has not been handled to your satisfaction, please contact –

Professor Jon Nicholl

*Dean of the School of Health and Related Research*

The University of Sheffield

[j.nicholl@sheffield.ac.uk](mailto:j.nicholl@sheffield.ac.uk)

**Will my taking part in this project be kept confidential?**

All personal details, including your name, contact details, occupation and employing organisation will remain protected and confidential throughout the research process. Furthermore, all research data collected within the project will be coded to ensure anonymity. Both personal details and research data will be stored securely on a password protected computer and saved to a secure computer drive. Upon completion of the research, all personal details and audio recordings of interviews (if approval has been given to record) will be permanently deleted.

All participants will be entitled to copies of the recordings and transcripts of their own interviews if they request them from the researcher.

**What will happen to the results of the research project?**

The results of the research project will be presented within the final thesis, which will be submitted for the award of Doctorate of Philosophy (PhD) during spring 2018. It is anticipated that upon approval of award, a full-text electronic copy of the thesis will be uploaded to an etheses repository (a publically accessible website providing free copies of theses).

In addition, it is hoped that the results of the research project could be used for publication in an academic journal. The data obtained during the course of the project may be used for addition or subsequent research.

The strict use of anonymity means that research participants and their respective organisation will not be able to be identified within the results, publications or any future research arising from this project.

**How was the research funded?**

The researcher was awarded a three year scholarship to undertake the research project by the School of Health and Related Research at The University of Sheffield.

**Ethical review and approval**

This research project has been ethically reviewed and approved by the School of Health and Related Research Ethics Committee, which administers The University of Sheffield’s Ethics Review Procedure.

**Contacts for further information**

Finally, thank you for taking time to read this information. Upon providing consent to take part in this research project, you will be provided with a hard copy of the participant information sheet and the mutually signed consent form to keep. If you have any questions about this research project or interview, feel free to contact the researcher –

Emma Howard-Drake

07989 808187

ehoward-drake1@sheffield.ac.uk

Or the academic supervisors for this work –

Dr Vanessa Halliday Dr Richard Cooper

*Lead academic supervisor*

Vanessa.halliday@sheffield.ac.uk Richard.cooper@sheffield.ac.uk

Tel: +44 (0) 114 222 4268 Tel: +44 (0) 114 222 0683  
Fax: +44 (0) 114 222 0749 Fax: +44 (0) 114 222 0749

*Postal address for researcher and academic supervisors –*

Section of Public Health

School of Health and Related Research (ScHARR)

The University of Sheffield

Regent Court, 30 Regent Street

Sheffield

S1 4DA

**Appendix J - Participant Consent Form**

|  |
| --- |
| **Title of Research Project**  English secondary school headteachers’ and chairs of governors perspectives’ on childhood obesity and its prevention  **Name of Researcher**  Emma Howard-Drake  Participant Identification Number for this project: Please initial box   1. I confirm that I have read and understand the information sheet dated explaining the above research project and I have had the opportunity to ask questions about the project 2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.   *Researcher contact details –*  Emma Howard-Drake  ScHARR, University of Sheffield  [ehoward-drake1@sheffield.ac.uk](mailto:ehoward-drake1@sheffield.ac.uk)  07989 808187  3. I agree for the interview to be audio recorded. I understand that after the interview  has been completed, the researcher will transcribe and anonymise the recording and then permanently delete the audio file.   1. I understand that my responses will be kept strictly confidential. I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. 2. I agree for the data collected from me to be used in future research 3. I agree to take part in the above research project.   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Name of Participant Date Signature  (*or legal representative*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Name of person taking consent Date Signature  (*if different from lead researcher*)  *To be signed and dated in presence of the participant*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Lead Researcher Date Signature  *To be signed and dated in presence of the participant*  Copies:  *Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be placed in the project’s main record (e.g. a site file), which must be kept in a secure location.* |

**Appendix K – Finalised questionnaire for use in quantitative phase**



**National survey on overweight and obesity in secondary schools –**

**Headteachers’ and chairs of governors’ views**

Section one - Survey introduction

Thank you for your interest in completing this survey. Please read the following information carefully before deciding whether or not to participate.

Conducted by Emma Howard-Drake (a PhD researcher at The University of Sheffield), this survey forms part of a research study exploring secondary school headteachers’ and chairs of governors’ perspectives about overweight and obesity, i.e. excess weight, in 11-16 year olds and its prevention.

Participating in the study involves you filling in this online survey, which should take no longer than 10-15 minutes to complete. The survey will ask about your views related to excess weight, i.e. overweight and obesity, secondary school pupils and secondary school settings. For the purpose of analysis you will also be asked for basic information about yourself (e.g. gender) and your school (e.g. school type). No personally identifiable information is required and all responses will remain completely anonymous.

In addition to inclusion in a thesis, findings from this survey and the wider research study may be published in academic publications and presented at conferences. It is hoped the study will inform future decisions and policies in relation to the prevention of excess weight, i.e. overweight and obesity in secondary schools in England.

You are totally free to decide whether or not to participate in this research, without any consequences. You may also withdraw from the study at any point without giving any reason, by closing your internet browser.

Many thanks for reading this information.

Emma Howard-Drake

University of Sheffield

ehoward-drake1@sheffield.ac.uk

\* Definitions used for the purpose of this survey –

Excess weight - A collective term for overweight and obesity, i.e. an abnormal or excessive fat accumulation that may impair a person's health.

The term 'junk food' refers to pre-prepared or packaged food that has low nutritional value

I have read and understood the above information and want to participate – YES or NO

Section two – About you

1. Which of the following best describes your role?

* Headteacher or Principal
* Chair of governors or Chair of trustees

1. What is your gender?

* Male
* Female
* Prefer not to say

1. What is your age?

* 21-30 years
* 31-40 years
* 41-50 years
* 51-60 years
* 61-70 years
* 71-80 years
* 81+ years
* Prefer not to say

1. How long have you been a headteacher or chair of governors for?

* Less than 1 year
* 1-5 years
* 6-10 years
* 11-15 years
* 16-20 years
* 21-25 years
* 26+ years
* Prefer not to say

Section three

Please select responses which best describe your views of the following statements:

* + 1. Generally speaking, in relation to pupils at my secondary school –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| I am concerned about levels of excess weight |  |  |  |  |  |
| I am concerned about unhealthy dietary habits |  |  |  |  |  |
| Unhealthy dietary habits are a greater concern to me than levels of excess weight |  |  |  |  |  |
| I am concerned about levels of sedentary behaviour |  |  |  |  |  |
| Sedentary behaviour is a greater concern to me than levels of excess weight |  |  |  |  |  |

* + 1. What percentage of pupils at your secondary school do you estimate to be of excess weight, i.e overweight or obese?
* 0-10%
* 11-20%
* 21-30%
* 31-40%
* 41-50%
* 51-60%
* 61-70%
* 71-80%
* 81-90%
* 91-100%
  + 1. From my perspective I believe that –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Visual assessment is an accurate method to identify excess weight in secondary school pupils |  |  |  |  |  |

* + 1. I believe that secondary school pupils from my school in general –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Consume too much junk food |  |  |  |  |  |
| Eat a healthy breakfast |  |  |  |  |  |
| Undertake enough physical activity |  |  |  |  |  |
| Consume too many sugary drinks |  |  |  |  |  |
| Spend too long being sedentary |  |  |  |  |  |

* + 1. Do you think pupils who receive free school meals (FSM) compared to those who don't –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Are more likely to be of excess weight |  |  |  |  |  |
| Have unhealthier dietary habits |  |  |  |  |  |
| Do less physical activity |  |  |  |  |  |

Section four

Please select responses which best describe your views of the following statements:

1. Within my secondary school –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Preventing excess weight gain in secondary school pupils is a priority |  |  |  |  |  |
| Improving dietary habits of secondary school pupils is a priority |  |  |  |  |  |
| There are more important issues to deal with than preventing excess weight gain in secondary school pupils |  |  |  |  |  |
| Improving physical activity habits of secondary school pupils is a priority |  |  |  |  |  |
| School staff should role model healthy lifestyles to secondary school pupils |  |  |  |  |  |

1. I believe that secondary schools –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Are an important setting for preventing excess weight gain in secondary school pupils |  |  |  |  |  |
| Should prioritise improving children and young people’s diet and activity levels to help prevent excess weight gain |  |  |  |  |  |
| Are not able to prevent excess weight gain in secondary school pupils |  |  |  |  |  |
| Should use a whole-school approach to develop life-long healthy eating and physical activity practices |  |  |  |  |  |
| Are able to positively influence the dietary habits of secondary school pupils |  |  |  |  |  |

1. As a headteacher or chair of governors I –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Should collaborate with parents and pupils to assess the whole school environment in order for children and young people to maintain a healthy weight |  |  |  |  |  |
| Should ensure that the ethos of all school policies helps children and young people to maintain a healthy weight, eat a healthy diet and be physically active |  |  |  |  |  |
| Am able to direct the school to take action to prevent excess weight gain in secondary school pupils |  |  |  |  |  |
| Should ensure that teaching, support and catering staff receive training on the importance of healthy-school policies and how to support their implementation |  |  |  |  |  |
| Have a responsibility for preventing excess weight gain in secondary school pupils |  |  |  |  |  |
| Am able to positively contribute to the prevention of excess weight gain in secondary school pupils |  |  |  |  |  |
| Attend meetings where preventing excess weight gain in secondary school pupils is discussed |  |  |  |  |  |

1. Within my secondary school setting we –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Meet the requirements of the school food plan |  |  |  |  |  |
| Provide extra-curricular physical activity opportunities |  |  |  |  |  |
| Embed healthy lifestyle education in the taught curriculum |  |  |  |  |  |
| Have a ‘locked gate’ policy at lunchtime |  |  |  |  |  |
| Promote active travel, e.g. walking/cycling to school |  |  |  |  |  |
| Have a policy for preventing excess weight gain in secondary school pupils |  |  |  |  |  |
| Provide healthy catering options |  |  |  |  |  |
| Focus on healthy lifestyles in Personal, Social and Health Education |  |  |  |  |  |
| Restrict the consumption of energy drinks |  |  |  |  |  |

1. Barriers to my school preventing excess weight gain in secondary school pupils include the –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Government's focus on academic progress |  |  |  |  |  |
| Availability of junk food near your school |  |  |  |  |  |
| Limited budget for school catering |  |  |  |  |  |
| School not being inspected by Ofsted on excess weight prevention |  |  |  |  |  |
| Lack of facilities for physical activity |  |  |  |  |  |
| School staff not role modelling healthy lifestyles |  |  |  |  |  |
| Parental influence undermining school action which contributes to the prevention of excess weight gain |  |  |  |  |  |

1. Please describe any other barriers to your school for preventing excess weight gain in secondary school pupils
2. The following facilitators would help my secondary school to prevent excess weight gain in secondary school pupils –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Training about excess weight prevention for school staff |  |  |  |  |  |
| Ofsted monitoring of school action that contributes to prevention of excess weight gain |  |  |  |  |  |
| Government funding for action contributing to excess weight prevention |  |  |  |  |  |
| Greater ability to determine my school priorities |  |  |  |  |  |
| National guidelines for preventing excess weight gain in secondary school pupils |  |  |  |  |  |

1. Please describe any other facilitators that would help your school to prevent excess weight gain in secondary school pupils

Section five

Please select responses which best describes your views of the following statements:

1. From my perspective, I believe that –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| A secondary school pupil’s home environment is more influential in the prevention of excess weight gain than the school environment |  |  |  |  |  |
| A secondary school pupil is more likely to be of excess weight if their parents are |  |  |  |  |  |
| Parents have the required knowledge to prevent excess weight gain in their children |  |  |  |  |  |
| Parents are aware of the risks of excess weight gain in secondary school pupils |  |  |  |  |  |
| If a secondary school pupil is of excess weight, it is their parents' fault |  |  |  |  |  |
| If a secondary school pupil is of excess weight it is society's fault |  |  |  |  |  |

1. To what extent do you agree or disagree with the following statements –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| I am concerned about the availability of junk near to my secondary school |  |  |  |  |  |
| I believe that unhealthy food costs less than healthy food |  |  |  |  |  |
| I am concerned about the marketing of junk food to children and young people |  |  |  |  |  |
| The food industry prioritises profits over the health of children and young people |  |  |  |  |  |
| Unhealthy eating is associated with poverty |  |  |  |  |  |

1. The following have a responsibility for preventing excess weight gain in secondary school pupils?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Secondary schools |  |  |  |  |  |
| Parents |  |  |  |  |  |
| Secondary school pupils themselves |  |  |  |  |  |
| Government |  |  |  |  |  |
| Primary schools |  |  |  |  |  |
| Food industry |  |  |  |  |  |
| Society as a whole |  |  |  |  |  |

1. The following are effective for preventing excess weight gain in secondary school pupils –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| Providing education in schools |  |  |  |  |  |
| National public awareness campaigns |  |  |  |  |  |
| Providing opportunities to be active |  |  |  |  |  |
| Restricting opportunities to be inactive |  |  |  |  |  |
| Providing opportunities to develop healthy eating habits |  |  |  |  |  |
| Restricting opportunities to develop unhealthy eating habits |  |  |  |  |  |
| Taxation, e.g. sugar tax on sugary drinks |  |  |  |  |  |
| Legislation, e.g. ban adverts for junk food |  |  |  |  |  |

1. What other approaches to preventing excess weight gain in secondary school pupils are or could be effective?
2. To help prevent excess weight gain in secondary school pupils, schools should work in partnership with –

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Disagree** | **Disagree** | **Neither agree or disagree** | **Agree** | **Strongly agree** |
| School nurses |  |  |  |  |  |
| General Practitioners (GPs) |  |  |  |  |  |
| Department for Education |  |  |  |  |  |
| Food Industry |  |  |  |  |  |
| Celebrities |  |  |  |  |  |
| Department of Health |  |  |  |  |  |
| Local Authority Public Health teams |  |  |  |  |  |
| Local community organisations |  |  |  |  |  |

1. Please provide any further comments you have about the prevention of excess weight gain in secondary schools

Section six – About your school

1. Which best describes your school type?

* Academy
* Community
* Foundation
* Free
* Grammar school
* Independent
* Voluntary aided
* Voluntary controlled
* Other

1. What percentage of your pupils currently receive free school meals (FSM)?

* 0-5%
* 6-10%
* 11-15%
* 16-20%
* 21-25%
* 26-30%
* 31-35%
* 36-40%
* 41-45%
* 46-50%
* 51%+
* Unsure

1. What percentage of pupils have been eligible for free school meals (FSM) at any time during the past 6 years (known as 'ever 6 FSM pupils) –

* 0-10%
* 11-20%
* 21-30%
* 31-40%
* 41-50%
* 51%+
* Unsure

1. What is your school's most recent Ofsted rating?

* 1 – Outstanding
* 2 – Good
* 3 – Requires improvement
* 4 – Inadequate
* Yet to be inspected
* Unsure

1. Approximately how many pupils currently attend your secondary school?

* 0-250 pupils
* 251-500 pupils
* 501-1000 pupils
* 1001 – 1500 pupils
* 1501 – 2000 pupils
* 2000 + pupils

**Appendix L - Statistical test results**

Presented within this appendix are the results from conducting three non-parametric statistical tests - Mann-Whitney U, Chi-squared and Spearman’s correlation coefficient on the quantitative data obtained.   Separate tables are presented, with the first, second and third reporting the resultant p values from conducting Mann-Whitney U and Chi-squared tests on relevant questions or statements and the independent variables of interest.  The fourth table provides both the outcome value and p value following the use of Spearman’s correlation coefficient.  For all three tests and associated tables, statistically significant results are indicated by a p value of < 0.05 (and the cell highlighted as per below) -

= statistically significant result, i.e. P value = < 0.05

Results from Mann-Whitney U tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Questions and opinion statements | | Role type, i.e. headteacher and chair of governor | School type | Gender |
| **Generally speaking, in relation to pupils at my secondary school -** | I am concerned about levels of excess weight | P = .899 (Retain Null) | P = .198 (Retain) | P = 0.068 |
| I am concerned about unhealthy dietary habits | P = 0.01 (Reject) | P = .577 (Retain) | P = 0.352 |
| Unhealthy dietary habits are a greater concern to me than levels of excess weight | P = 0.03 (Reject) | P = .980 (Retain) | P = 0.548 |
| I am concerned about levels of sedentary behaviour | P = 0.570 (Retain) | P = .129 (Retain) | P = 0.326 |
| Sedentary behaviour is a greater concern to me than levels of excess weight | P = 0.768 (Retain) | P = .198 (Retain) | P = 0.338 |
| **What percentage of pupils at your secondary school do you estimate to be of excess weight?** | | P = 0.892 (Retain) | P = 0.078 | P = 0.007 |
| **Visual assessment is an accurate method to identify excess weight in secondary school pupils** | | P = .513 | P = 0.900 | P = 0.798 |
| **I believe that secondary school pupils from my school in general -** | Consume too much junk food | P = 0.05 | P = 0.489 | P = 0.611 |
| Eat a healthy breakfast | P = 0.02 | P = 0.025 | P = 0.718 |
| Undertake enough physical activity | P = .872 | P = 0.001 | P = 0.843 |
| Consume too many sugary drinks | P = 0.018 | P = .830 | P = 0.705 |
| Spend too long being sedentary | P = 0.038 | P = .627 | P = 0.681 |
| **Do you think pupils who receive free school meals (FSM) compared to those who don't -** | Are more likely to be of excess weight | P = 0.695 | P = 0.126 | P = 0.006 |
| Have unhealthier dietary habits | P = 0.154 | P = 0.471 | P = 0.346 |
| Do less physical activity | P = 0.969 | P = 0.178 | P = 0.003 |
| **From my perspective, I believe that -** | A secondary school pupil’s home environment is more influential in the prevention of excess weight gain than the school environment | P = .203 | P = 0.88 | P = 0.188 |
| A secondary school pupil is more likely to be of excess weight if their parents are | P = 0.293 | P = 0.205 | P = 0.962 |
| Parents have the required knowledge to prevent excess weight gain in their children | P = 0.338 | P = 0.065 | P = 0.711 |
| Parents are aware of the risks of excess weight gain in secondary school pupils | P = 0.166 | P = 0.067 | P = 0.132 |
| If a secondary school pupil is of excess weight, it is their parents' fault | P = 0.104 | P = 0.330 | P = 0.269 |
| If a secondary school pupil is of excess weight it is society's fault | P = 0.264 | P = 0.831 | P = 0.265 |
| **To what extent do you agree or disagree with the following statements -** | I am concerned about the availability of junk near to my secondary school | P = 0.089 | P = 0.094 | P = 0.968 |
| I believe that unhealthy food costs less than healthy food | P = 0.222 | P = 0.535 | P = 0.385 |
| I am concerned about the marketing of junk food to children and young people | P = 0.327 | P = 0.645 | P = 0.828 |
| The food industry prioritises profits over the health of children and young people | P = 0.500 | P = 0.923 | P = 0.846 |
| Unhealthy eating is associated with poverty | P = 0.767 | P = 0.02 | P = 0.659 |
| **The following have a responsibility for preventing excess weight gain in secondary school pupils? -** | Secondary schools | P = 0.096 | P = 0.070 | P = 0.864 |
| Parents | P = 0.014 | P = 0.286 | P = 0.619 |
| Secondary school pupils themselves | P = 0.594 | P = 0.043 | P = 0.123 |
| Government | P = 0.109 | P = 0.563 | P = 0.398 |
| Primary schools | P = 0.360 | P = 0.158 | P = 0.322 |
| Food industry | P = 0.522 | P = 0.678 | P = 0.203 |
| Society as a whole | P = 0.663 | P = 0.957 | P = 0.162 |
| **The following are effective for preventing excess weight gain in secondary school pupils -** | Providing education in schools | P = 0.024 | P = 0.092 | P = 0.853 |
| National public awareness campaigns | P = 0.222 | P = 0.064 | P = 0.763 |
| Providing opportunities to be active | P = 0.128 | P = 0.109 | P = 0.786 |
| Restricting opportunities to be inactive | P = 0.816 | P = 0.098 | P = 0.261 |
| Providing opportunities to develop healthy eating habits | P = 0.383 | P = 0.131 | P = 0.680 |
| Restricting opportunities to develop unhealthy eating habits | P = 0.213 | P = 0.096 | P = 0.046 |
| Taxation, e.g. sugar tax on sugary drinks | P = 0.097 | P = 0.779 | P = 0.854 |
| Legislation, e.g. ban adverts for junk food | P = 0.119 | P = 0.661 | P = 0.541 |
| **To help prevent excess weight gain in secondary school pupils, schools should work in partnership with -** | School nurses | P = 0.086 | P = 0.919 | P = 0.708 |
| General Practitioners (GPs) | P = 0.110 | P = 0.506 | P = 0.251 |
| Department for Education | P = 0.053 | P = 0.155 | P = 0.192 |
| Food Industry | P = 0.329 | P = 0.309 | P = 0.132 |
| Celebrities | P = 0.434 | P = 0.466 | P = 0.331 |
| Department of Health | P = 0.619 | P = 0.133 | P = 0.035 |
| Local Authority Public Health teams | P = 0.548 | P = 0.230 | P = 0.253 |
| Local community organisations | P = 0.242 | P = 0.298 | P = 0.555 |
| **Within my secondary school -** | Preventing excess weight gain in secondary school pupils is a priority | P = 0.790 | P = 0.125 | P = 0.419 |
| Improving dietary habits of secondary school pupils is a priority | P = 0.704 | P = 0.739 | P = 0.770 |
| There are more important issues to deal with than preventing excess weight gain in secondary school pupils | P = 0.173 | P = 0.828 | P = 0.228 |
| Improving physical activity habits of secondary school pupils is a priority | P = 0.662 | P = 0.556 | P = 0.844 |
| School staff should role model healthy lifestyles to secondary school pupils | P = 0.020 | P = 0.201 | P = 0.200 |
| **I believe that secondary schools -** | Are an important setting for preventing excess weight gain in secondary school pupils | P = 0.758 | P = 0.170 | P = 0.033 |
| Should prioritise improving children and young people’s diet and activity levels to help prevent excess weight gain | P = 0.427 | P = 0.137 | P = 0.870 |
| Are not able to prevent excess weight gain in secondary school pupils | P = 0.255 | P = 0.344 | P = 0.358 |
| Should use a whole-school approach to develop life-long healthy eating and physical activity practices | P = 0.667 | P = 0.701 | P = 0.823 |
| Are able to positively influence the dietary habits of secondary school pupils | P = 0.259 | P = 0.285 | P = 0.174 |
| Are able to positively influence the physical activity behaviours of secondary school pupils | P = 0.565 | P = 0.134 | P = 0.698 |
| **As a headteacher or chair of governors I -** | Should collaborate with parents and pupils to assess the whole school environment in order for children and young people to maintain a healthy weight | P = 0.011 | P = 0.002 | P = 0.465 |
| Should ensure that the ethos of all school policies helps children and young people to maintain a healthy weight, eat a healthy diet and be physically active | P = 0.204 | P = 0.54 | P = 0.386 |
| Am able to direct the school to take action to prevent excess weight gain in secondary school pupils | P = 0.167 | P = 0.016 | P = 0.316 |
| Should ensure that teaching, support and catering staff receive training on the importance of healthy-school policies and how to support their implementation | P = 0.668 | P = 0.128 | P = 0.825 |
| Have a responsibility for preventing excess weight gain in secondary school pupils | P = 0.496 | P = 0.004 | P = 0.618 |
| Am able to positively contribute to the prevention of excess weight gain in secondary school pupils | P = 0.312 | P = 0.72 | P = 0.02 |
| Attend meetings where preventing excess weight gain in secondary school pupils is discussed | P = 0.897 | P = 0.659 | P = 0.460 |
| **Barriers to my school preventing excess weight gain in secondary school pupils include the -** | Government's focus on academic progress | P = 0.456 | P = .106 | P = 0.688 |
|  | Availability of junk food near your school | P = 0.309 | P = 0.147 | P = 0.277 |
|  | Limited budget for school catering | P = 0.149 | P = 0.009 | P = 0.798 |
|  | School not being inspected by Ofsted on excess weight prevention | P = 0.03 | P = 0.801 | P = 0.557 |
|  | Lack of facilities for physical activity | P = 0.783 | P = 0.141 | P = 0.967 |
|  | School staff not role modelling healthy lifestyles | P = 0.560 | P = 0.483 | P = 0.404 |
|  | Parental influence undermining school action, which contributes to the prevention of excess weight gain | P = 0.200 | P = 0.001 | P = 0.656 |

Results from Chi-squared test

|  |  |  |
| --- | --- | --- |
| Question and opinion statements | | School type |
| **Generally speaking, in relation to pupils at my secondary school\* -** | Meet the requirements of the school food plan | P = 0.273 |
| Provide extra-curricular physical activity opportunities | P = 0.015 |
| Embed healthy lifestyle education in the taught curriculum | P = 0.188 |
| Have a ‘locked gate’ policy at lunchtime | P = 0.095 |
| Promote active travel, e.g. walking/cycling to school | P = 0.029 |
| Have a policy for preventing excess weight gain in secondary school pupils | P = 0.046 |
| Provide healthy catering options | P = 0.672 |
| Focus on healthy lifestyles in Personal, Social and Health Education | P = 0.673 |
| Restrict the consumption of energy drinks | P = 0.507 |

\* For this test, ‘Unsure’ responses were removed from the calculations in order to identify associations between participants who said either ‘Yes’ or ‘No’ and their school type

Results from Chi-squared test

|  |  |  |
| --- | --- | --- |
| Question and opinion statements | | Role type |
| **Generally speaking, in relation to pupils at my secondary school\*\* -** | Meet the requirements of the school food plan | P = 0.134 |
| Provide extra-curricular physical activity opportunities | P = 0.513 |
| Embed healthy lifestyle education in the taught curriculum | P = 0.010 |
| Have a ‘locked gate’ policy at lunchtime | P = 0.095 |
| Promote active travel, e.g. walking/cycling to school | P = 0.294 |
| Have a policy for preventing excess weight gain in secondary school pupils | P = 0.000 |
| Provide healthy catering options | P = .180 |
| Focus on healthy lifestyles in Personal, Social and Health Education | P = 0.093 |
| Restrict the consumption of energy drinks | P = 0.000 |

\* For this test, responses were dichotomoised into ‘Unsure’ versus ‘Yes’/’No’, in order to identify associations between participant type and

the chosen response.

Results from Spearman’s correlation coefficient

In addition to the p values being reported, the table below also provides the Spearman’s correlation coefficient value for each

test undertaken.  As with the two previous tests, statistically significant results are those p values < 0.05.  Two cell

Colours are used within this table to indicate - -0.3 to +0.3 weak correlation

= Statistically significant **moderate** correlation, i.e. -0.5 to -0.3 or 0.3 to 0.5 (P value = < 0.05)

= Statistically significant **weak** correlation, i.e. -0.3 to +0.3 (P value = < 0.05)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Questions and opinion statements** | | **% pupils currently receiving free school meals** | **% pupils who have been eligible at any time for free school meals in the last 6 years** | **Pupil population** |
| **Generally speaking, in relation to pupils at my secondary school -** | I am concerned about levels of excess weight | r = .329 (p = 0.01) | r = .337 (p = 0.00) | r = .034 (p = 0.708) |
| I am concerned about unhealthy dietary habits | r = .244 (p = 0.01) | r = .309 (p = 0.01) | r = .123 (p = 0.168) |
| Unhealthy dietary habits are a greater concern to me than levels of excess weight | r = .104 (p = 0.284) | r = .120 (p = .197) | r = .033 (p = .711) |
| I am concerned about levels of sedentary behaviour | r = .244 (p = 0.02) | r = .211 (p = 0.02) | r = -.051 (p = 0.565) |
| Sedentary behaviour is a greater concern to me than levels of excess weight | r = .065 (p = 0.505) | r = .074 (p = 0.426) | r = .027 (p = 0.764) |
| **What percentage of pupils at your secondary school do you estimate to be of excess weight?** | | r = .270 (p = 0.005) | r = .280 (p = 0.002) | r = .069 (p = 0.444) |
| **Visual assessment is an accurate method to identify excess weight in secondary school pupils** | | r = .106 (p = 0.273) | r = .028 (p = 0.761) | r = -.050 (p = .574) |
| **I believe that secondary school pupils from my school in general -** | Consume too much junk food | r = .313 (p = 0.001) | r = .368 (p = 0.000) | r = -.071 (p = .908) |
| Eat a healthy breakfast | r = -.373 (p = 0.000) | r = -.385 (p = 0.000) | r = -.080 (p = .370) |
| Undertake enough physical activity | r = -.309 (p = 0.001) | r = -.323 (p = 0.000) | r = -.036 (p = .687) |
| Consume too many sugary drinks | r = .139 (p = 0.151) | r = .166 (p = 0.07) | r = -.088 (p = 0.324) |
| Spend too long being sedentary | r = .235 (p = 0.01) | r = .245 (p = 0.008) | r = -.111 (p = 0.215) |
| **Do you think pupils who receive free school meals (FSM) compared to those who don't -** | Are more likely to be of excess weight | r = -.127 (p = .191) | r = -.085 (p = 0.360) | r = .020 (p = 0.822) |
| Have unhealthier dietary habits | r = 0.85 (p = 0.385) | r = .121 (p = 0.193) | r = .123 (p = 0.168) |
| Do less physical activity | r = -.085 (p = 0.380) | r = -.036 (p = 0.699) | r = -.011 (p = 0.902) |
| **From my perspective, I believe that -** | A secondary school pupil’s home environment is more influential in the prevention of excess weight gain than the school environment | r = .164 (p = 0.091) | r = .158 (p = 0.090) | r = .035 (p - 0.699) |
| A secondary school pupil is more likely to be of excess weight if their parents are | r = .075 (p = .439) | r = .113 (p = 0.227) | r = .093 (p = 0.699) |
| Parents have the required knowledge to prevent excess weight gain in their children | r = -.140 (p = 0.150) | r = -.185 (p = 0.04) | r = - .079 (p = 0.298) |
| Parents are aware of the risks of excess weight gain in secondary school pupils | r = -.111 (p = 0.255) | r = - .189 (p = 0.04) | r = -.111 (p = 0.214) |
| If a secondary school pupil is of excess weight, it is their parents' fault | r = .064 (p = .508) | r = .047 (p = 0.616) | r = .047 (p = 0.603) |
| If a secondary school pupil is of excess weight it is society's fault | r = .016 (p = 0.867) | r = .052 (p = 0.578) | r = .041 (p = 0.649) |
| **To what extent do you agree or disagree with the following statements -** | I am concerned about the availability of junk near to my secondary school | r = .234 (p = 0.001) | r = .252 (p = 0.006) | r = .147 (p = 0.099) |
| I believe that unhealthy food costs less than healthy food | r = .119 (p = 0.220) | r = .037 (p = 0.689) | r = -.039 (p = 0.660) |
| I am concerned about the marketing of junk food to children and young people | r = -062 (p = 0.527) | r = -.039 (p = 0.679) | r = -.086 (p = 0.337) |
| The food industry prioritises profits over the health of children and young people | r = .014 (p = 0.887) | r = .037 (p = 0.699) | r = -.080 (p = 0.373) |
| Unhealthy eating is associated with poverty | r = .231 (p = 0.001) | r = .151 (p = 0.104) | r = .095 (p = 0.287) |
| **The following have a responsibility for preventing excess weight gain in secondary school pupils? -** | Secondary schools | r = .045 (p = 0.644) | r = .090 (p = 0.334) | r = -.049 (p = 0.584) |
| Parents | r = -.154 (p = 0.112) | r = -.117 (p = 0.207) | r = -.118 (p = 0.186) |
| Secondary school pupils themselves | r = -.063 (p = 0.520) | r = -.026 (p = 0.780) | r = -.251 (p = 0.004) |
| Government | r = -.067 (p = 0.494) | r = -.025 (p = 0.789) | r = -.059 (p = 0.508) |
| Primary schools | r = .006 (p = 0.948) | r = .060 (p = 0.524) | r = -.155 (p = 0.082) |
| Food industry | r = .016 (p = 0.871) | r = .040 (p = 0.670) | r = -.113 (p = 0.206) |
| Society as a whole | r = .-012 (p = 0.901) | r = .045 (p = 0.632) | r = -.059 (p = 0.510) |
| **The following are effective for preventing excess weight gain in secondary school pupils -** | Providing education in schools | r = -.079 (p = 0.416) | r = .023 (p = 0.807) | r = -.184 (p = 0.038) |
| National public awareness campaigns | r = -.060 (p = 0.535) | r = -.011 (p = 0.903 | r = -.083 (p = 0.354) |
| Providing opportunities to be active | r = -.032 (p = 0.745) | r = -.031 (p = 0.743) | r = -.195 (p = 0.028) |
| Restricting opportunities to be inactive | r = -.159 (p = 0.101) | r = -.109 (p = 0.242) | r = -.031 (p = 0.732) |
| Providing opportunities to develop healthy eating habits | r = -.147 (p = 0.130) | r = -.083 (p = 0.376) | r = -.112 (p = 0.211) |
| Restricting opportunities to develop unhealthy eating habits | r = -.059 (p = 0.545) | r = -.083 (p = 0.373) | r = .049 (p = 0.588) |
| Taxation, e.g. sugar tax on sugary drinks | r = .036 (p = 0.708) | r = .146 (p = 0.117) | r = -.078 (p = 0.386) |
| Legislation, e.g. ban adverts for junk food | r = .117 (p = 0.229) | r = .069 (p = 0.117) | r = -.032 (p = 0.721) |
| **To help prevent excess weight gain in secondary school pupils, schools should work in partnership with -** | School nurses | r = .168 (p = 0.082) | r = .160 (p = 0.084) | r = .009 (p = 0.924) |
| General Practitioners (GPs) | r = .103 (p = 0.289) | r = .187 (p = 0.044) | r = .121 (p = 0.176) |
| Department for Education | r = -.063 (p = 0.515) | r = -.033 (p = 0.721) | r = -.065 (p = 0.468) |
| Food Industry | r = 0.03 (p = 0.515) | r = -.007 (p = 0.941) | r = -.077 (p = 0.387) |
| Celebrities | r = .091 (p = 0.350) | r = .075 (p = 0.421) | r = -.166 (p = 0.062) |
| Department of Health | r = .047 (p = 0.626) | r = .020 (p = 0.832) | r = -.163 (p = 0.068) |
| Local Authority Public Health teams | r = .044 (p = 0.652) | r = .005 (p = 0.954) | r = -.207 (p = 0.020) |
| Local community organisations | r = .109 (p = 0.262) | r = .046 (p = 0.620) | r = -210 (p = 0.018) |
| **Within my secondary school -** | Preventing excess weight gain in secondary school pupils is a priority | r = .016 (p = 0.869) | r = .022 (p = 0.814) | r = -..99 (p = 0.267) |
| Improving dietary habits of secondary school pupils is a priority | r = -.158 (p = 0.102) | r = -.098 (p = 0.292) | r = .052 (p = 0.565) |
| There are more important issues to deal with than preventing excess weight gain in secondary school pupils | r = .069 (p = 0.476) | r = .077 (p = 0.411) | r = .075 (p = 0.400) |
| Improving physical activity habits of secondary school pupils is a priority | r = -.059 (p = 0.546) | r = -.015 (p = 0.875) | r = -.037 (p = 0.677 |
| School staff should role model healthy lifestyles to secondary school pupils | r = -.102 (p = 0.295) | r = .068 (p = 0.465) | r = -.091 (p = 0.308) |
| **I believe that secondary schools -** | Are an important setting for preventing excess weight gain in secondary school pupils | r = -.050 (p = 0.610) | r = .005 (p = 0.959) | r = -.087 (p = 0.332) |
| Should prioritise improving children and young people’s diet and activity levels to help prevent excess weight gain | r = -.129 (p = 0.184) | r = -.013 (p = 0.887) | r = -.189 (p = 0.033) |
| Are not able to prevent excess weight gain in secondary school pupils | r = -.051 (p = 0.602 | r = -.060 (p = 0.518) | r = -.059 (p = 0.513) |
| Should use a whole-school approach to develop life-long healthy eating and physical activity practices | r = -.217 (p = 0.024) | r = -.086 (p = 0.354) | r = -.061 (p = 0.495) |
| Are able to positively influence the dietary habits of secondary school pupils | r = .021 (p = 0.832) | r = -.045 (p = 0.631) | r = -.068 (p = 0.449) |
| Are able to positively influence the physical activity behaviours of secondary school pupils | r = .017 (p = 0.862) | r = -.041 (p = 0.662) | r = -.100 (p = 0.261) |
| **As a headteacher or chair of governors I -** | Should collaborate with parents and pupils to assess the whole school environment in order for children and young people to maintain a healthy weight | r = -.077 (p = 0.427) | r = .013 (p = 0.891) | r = .207 (p = 0.002) |
| Should ensure that the ethos of all school policies helps children and young people to maintain a healthy weight, eat a healthy diet and be physically active | r = -.149 (p = 0.124) | r = .056 (p = 0.546) | r = -.129 (p = 0.149) |
| Am able to direct the school to take action to prevent excess weight gain in secondary school pupils | r = -.107 (p = 0.270) | r = .063 (p = 0.502) | r = -.156 (p = 0.081) |
| Should ensure that teaching, support and catering staff receive training on the importance of healthy-school policies and how to support their implementation | r = -.166 (p = 0.087) | r = .049 (p = 0.599) | r = -.066 (p = 0.464) |
| Have a responsibility for preventing excess weight gain in secondary school pupils | r = -.051 (p = 0.600) | r = .035 (p = 0.707) | r = -.188 (p = 0.034) |
| Am able to positively contribute to the prevention of excess weight gain in secondary school pupils | r = .077 (p = 0.175) | r = 0.32 (p = 0.734) | r = -.040 (p = 0.652) |
| Attend meetings where preventing excess weight gain in secondary school pupils is discussed | r = .175 (p = 0.070) | r = .180 (p = 0.052) | r = -0.66 (p = 0.463) |
| **Barriers to my school preventing excess weight gain in secondary school pupils include the -** | Government's focus on academic progress | r = .176 (p = 0.068) | r = .207 (p = 0.025) | r = .033 (p = 0.712) |
|  | Availability of junk food near your school | r = .182 (p = 0.059) | r = .179 (p = 0.053) | r = .102 (p = 0.254) |
|  | Limited budget for school catering | r = .176 (p = 0.069) | r = .158 (p = 0.090) | r = -.068 (p = 0.448) |
|  | School not being inspected by Ofsted on excess weight prevention | r = .023 (p = 0.814) | r = .050 (p = 0.591) | r = -.162 (p = 0.069) |
|  | Lack of facilities for physical activity | r = -.066 (p = 0.496) | r = -.086 (p = 0.359) | r = -.258 (p = 0.003) |
|  | School staff not role modelling healthy lifestyles | r = .145 (p = 0.134) | r = .152 (p = 0.101) | r = -.147 (p = 0.098) |
|  | Parental influence undermining school action, which contributes to the prevention of excess weight gain | r = .303 (p = 0.001) | r = .216 (p = 0.019) | r = .170 (p = 0.057) |

**Appendix M - Personal reflection of the research process**

The purpose of this appendix is to provide a reflective insight into the researcher’s experience of conducting this doctoral study.  This appendix discusses what the researcher learnt throughout the journey of completing the research and reflects upon which aspects were particularly positive or especially challenging.  Whereas the third person has been used throughout the thesis, i.e. ‘the researcher’, given the personal nature of the account it was deemed more appropriate to utilise the first person within this appendix.

When I first started the research, the first few months were much more challenging than I expected them to be.  Due to a significant change in my personal circumstances and the emotional impact which resulted, I found juggling both a professional role in public health (for 2 days a week) and a new research project (for 3 days a week) really difficult.  I didn’t feel I had the ‘head space’ to conceptualise the overarching purpose of the research or in fact what I was hoping this project would achieve.  After increasingly feeling disillusioned, I had a very open, reflective and in the end constructive couple of meetings with my supervisors.  Getting back to basics as to why I originally applied for the faculty scholarship and what my research passions were resulted in both myself and the project gaining a new sense of direction and focus.

The adoption of a mixed methods approach and exploratory sequential design for the study wasn’t proposed at the point of starting the project.  Typically I have always leant towards a desire to undertake qualitative research as I have a genuine interest in exploring and understanding people’s beliefs, perspectives and experiences.  I had therefore envisaged (and originally planned) that this study would be a qualitative only research project.  Being completely honest, an additional reason for initially adopting a qualitative approach was due to a fear of anything numerical or statistical.  Having openly expressed this to my supervisors early in the design of the study they both encouraged me to see this research as an opportunity to develop my knowledge and skills related to quantitative methodologies.  This fact, coupled with the paucity of literature related to the research question provided a meaningful and pragmatic opportunity to undertake a mixed methods study, where the qualitative phase could still take priority (i.e. exploratory sequential design).  In hindsight, this was an excellent decision, as I gained really valuable new skills and experiences in both qualitative and quantitative methods and I was able to address the research question more comprehensively.

Perhaps unsurprisingly given my likeness for engaging with people, I really enjoyed conducting the semi-structured interviews.  I found it relatively easy to gain a rapport with participants and although I was initially concerned about whether I had the required interviewing skills, my confidence increased as the process continued.  I did feel really conscious however during the interviews about whether my pre-existing knowledge or beliefs around the topic under study was influencing the number and type of probing questions I posed to participants.  Despite this I reflected on the fact that having this self-awareness during each interview would hopefully minimise potential researcher bias.

Whilst transcribing the audio tapes was extremely time intensive, the most challenging aspect of the qualitative phase related to conducting the thematic analysis.  Having reviewed a variety of analytical methods, I selected thematic analysis given the perception it was an accessible method for novice researchers.  However, with over 250 pages of data facing me at the start of the process, the thought of being able to produce a coherent whilst illuminating narrative of the qualitative findings seemed at times impossible.  One of the difficulties I encountered was learning to accept that there wasn’t a right way to conduct the thematic analysis and that it was perfectly legitimate methodologically speaking for two researchers to read the same set of data and come up with different conclusions or interpretations.  I think my perceived necessity to do things ‘correctly’, was driven by an overwhelming sense of responsibility to represent participants accurately, and ensure that I was being faithful to their perspectives.  Spending months thoroughly analysing the data set and having supportive dialogue with my supervisors assisted in my understanding that regardless of the analytical method employed, qualitative analysis is extremely time consuming, iterative and fundamentally subjective in nature.  Consequently, having completed the qualitative findings report, I felt extremely satisfied that I felt I had been able to make sense of the complex views and experiences shared by participants.

Given the type of mixed methods design chosen (exploratory sequential), I knew at the point of its selection, that being able to effectively integrate two phases was of crucial importance to the study as a whole.  One of the main challenges as reported in chapter 7, was the lack of explicit published guidance on how to undertake the task of developing a quantitative instrument from qualitative findings.  I found this really frustrating, as I had wrongly expected there to be a gold standard approach with defined methodological steps.  Despite this issue, engaging with academics from across the world to discuss their experiences of conducting the design was really useful and enlightening.  It gave me the opportunity to think about other aspects of the process of integration and the design as a whole that I hadn’t considered.  In addition it enabled me to feel confident that I had been robust and systematic in my approach to integrating the two study phases.

Surprisingly, I actually enjoyed the process of developing, distributing and analysing the online questionnaire.  There was definitely a transition period, where I had to adjust my thinking to become more quantitatively focused.  For example, initially when constructing the questions my supervisors informed I was still reflecting a mainly qualitative mindset, i.e. using predominantly open questions such as ‘how do you feel about…?’.  Spending time reading relevant academic texts regarding survey development and reviewing published questionnaires helped me to formulate more appropriate language and phrasing use.  Regarding the quantitative data analysis, despite historically fearing anything remotely numerical, once I learnt the necessary skills to use SPSS, I liked the methodical nature of performing statistical tests.  Furthermore, I could see the value for my professional role as a Specialty Registrar in Public Health in having practical experience of employing descriptive and inferential statistics.

Overall and overwhelming the experience of undertaking this postgraduate research project has been rewarding and whilst intellectually demanding it has also been extremely fulfilling on both a professional and personal level.  Over the three year period I genuinely identified a sense of growth not only in my perceived academic ability, but in my confidence that I was able to successfully complete a doctoral research project.  It is absolutely true, that there have been a number of occasions where self-doubt, impatience and frustration have appeared.  Furthermore, a number of external factors negatively influenced both my ability and desire to complete each element of the study and resultant thesis.  For example, obtaining a position as a Speciality Registrar in Public Health during the middle of the research whilst felt like a great achievement, also presented significant challenges.  It was difficult at times to balance competing commitments, given that I was doing a full time doctoral study and working two days a week in a professional occupation.  This meant that frequently and especially during the last full year of the project, I had to work evenings and weekends in order to ensure that the project was completed within the three years and to the required standard.

During the particularly challenging times, the support from my supervisors has been invaluable.  Their guidance, advice and open door policy made an immeasurable difference to my research journey.  As did the recognition by my supervisors and increasingly myself, that no matter what obstacles I faced and how many times my motivation waned, I would always bounce back and find the determination to continue with my academic studies.   I could also see even during periods of emotional stress that the benefits of completing the project outweighed any current difficulties.  In addition, the knowledge and skills I feel I have learnt from undertaking the project and completing the doctoral development programme have been really useful outside of academia.  For example my enhanced critical thinking, communication (both in written and oral form) and ability to search for and appraise evidence has proven invaluable within my professional role.

If I was to undertake the doctoral study again, there are definitely things I would do differently.  Firstly and perhaps most importantly to me, would be to have a much greater faith in my own ability and be less critical of my work.  Regardless of how many times my supervisors and other academics confirmed I was performing to a high standard, the self-doubt regularly crept in and at times caused definite lulls in motivation.  Secondly, I would adopt a more open mind regarding what elements of a research project I may or may not enjoy.  From the outset I had convinced myself that as a qualitative researcher at heart I would not like the quantitative phase of the study and it was merely good for self-development.  Analysing the questionnaire responses and performing various statistical tests was actually enjoyable.  Lastly, I would also pace myself and the activities I undertook differently.  I got to the last three months of the project to realise that whilst completing a doctoral study is an inherently intellectual task, it is also a test of resilience and perseverance and both of which are thoroughly tested when you don’t allocate enough down time.  Given that, I think I would’ve taken some pressure off myself periodically and instead of a two relatively short holidays in three years, maybe instead had at least a week off in the sun doing nothing once a year!