Understanding Help-Seeking and Uptake of Support for Weight Management

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Declaration

This thesis has been submitted for the award of Doctorate in Clinical Psychology (DClinPsy) at the University of Sheffield. It has not been submitted to any other institution, or for the purpose of obtaining any other qualifications.

Structure and Word Count

Section One: Literature Review   **Word Count**

    Excluding references and tables: 7950

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Section Two: Research Report

    Excluding references and tables: 7684

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Lay Summary

Many people are not satisfied with their weight. People might want to change their weight because they are worried about their health, how they look, and how they feel. Living with obesity is linked to different physical health problems and mental health problems. Sometimes people need help from professionals to change their weight. So it is important to help people with weight issues to ask for help and attend services. This can help people to feel better or reduce the risk of getting unwell.

This research is made up of two parts. The first part brought together the research on how people get help from professionals to lose weight, gain weight, or to try and keep their weight the same. It also included things that can make it hard or easier for people to get help for weight issues. The author found 32 studies which looked at help-seeking for weight issues. The outcomes were combined which showed that people asked for help to change their weight from doctors, nurses, and weight loss groups. Some people found it harder to ask for help if they had negative experiences of asking for help or from trying to change their weight before. Some people said that time, money, and not enough services were barriers to asking for help. Some people said that they were worried that they would be judged or shamed for their weight issues. This research could help services to improve the accessibility and availability of support, especially for people who experience lots of barriers to getting help for weight issues.

The second part of the research looked for patterns when people did not attend the first session of a weight loss group. People who signed up to take part in a free 12-week weight loss group were asked to complete an online questionnaire.

This included questions which looked at how capable and motivated people think they are to attend the weight loss group, and if they have the opportunities to attend. The results found that people were less likely to turn up to the first session if they lived in poorer areas. Also, people were less likely to turn up if they scored themselves as being less capable. Capable means having the right skills, knowledge and ability to attend the group. This research could help by showing that more education and support to learn new skills could help people to attend weight loss groups. The education could be available in local communities and in schools which would help to reach lots of people.

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Finally, to my family, friends, and the 6am gym crew who have been there cheering me on. And a special thanks to Will and Hannah. For the sacrifices you've made so I could fulfil a lifelong dream. You have both never doubted that I could achieve this, and I am forever grateful to you, for everything.

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Section One: Literature Review

Help-Seeking Behaviour for Weight Management: A Scoping Review

Abstract

Objectives

      Weight management describes practices which are used to change or maintain body weight. People with weight-related issues may require external support to help them to practice weight management techniques and may use help-seeking behaviours. This may include psychologically informed practices based on behaviour change theories. As this is a relatively novel and potentially broad topic, a scoping review was proposed. This scoping review aimed to map the literature relating to help-seeking behaviour for weight management.

Method

      Systematic searches of three electronic databases were conducted. Studies were identified using a combination of search terms relating to help-seeking behaviour and weight management following the Population, Context, Concept mnemonic. Data charting was completed to extract relevant information which was then synthesised and described narratively.

Results

      In total, 32 papers were included in the review. The studies predominantly represented help-seeking for weight loss, however 10 studies explored help-seeking for weight issues associated with eating disorder diagnoses. Participants most frequently sought help for weight issues due to current health concerns, emotional wellbeing and appearance. Barriers and facilitators to help-seeking for weight management were grouped into four main themes: previous experiences of help-seeking, individual factors, service specific factors and social factors.

Conclusion

The review highlighted several areas for future research including the exploration of the facilitators to help-seeking, help-seeking for weight gain, and utilising psychologically informed models to conceptualise and understand help-seeking. This review could inform service development opportunities to improve the accessibility and availability of support; particularly for people who experience several systemic barriers to weight-related healthcare.

Practitioner Points

- People report several factors which act as barriers to seeking help for weight-related issues. Understanding these barriers and conducting further research investigating the facilitators to help-seeking could improve help-seeking and engagement in weight management support.
- It could be important to develop the evidence base regarding help-seeking for weight gain as the review highlighted a gap in knowledge in this area.
- Developing and implementing psychologically informed training opportunities for professional sources of support is essential to promote sensitive, compassionate and empowering weight-related healthcare.

Keywords

Help-seeking, weight management, obesity, weight-related healthcare

Help-Seeking Behaviour for Weight Management: A Scoping Review

Weight management refers to the development of health-promoting lifestyles through practices and behaviours which are used to change or maintain body weight, such as dietary modifications and increased physical activity (Seagle et al., 2009). Seagle et al. (2009) described that the aims of weight management are to reduce or prevent excessive weight gain, to support dietary changes and exercise, and to improve physical and mental health. Weight management strategies can also be utilised to support appropriate weight gain, aiming to reduce the physical and mental health risks associated with a low body weight.

Weight management is a salient topic as the prevalence of overweight and obesity is increasing, posing a significant public health concern (Public Health England [PHE], 2020). It is estimated that in 2021, 26% of adults in England live with obesity whilst 38% live with overweight (NHS Digital, 2022). Current research indicates that obesity is more prevalent for individuals who are older, from more deprived areas, identify as Black or a minority ethnic group, or people who have disabilities (PHE, 2022).

The National Institute for Health and Care Excellence (NICE, 2022) recommends measuring body mass index (BMI) and waist circumference to calculate if a person's weight is considered underweight, healthy, overweight, or obese, and to determine health risks. Overweight and underweight are associated with many health risk factors which can impact upon quality of life and increase health service use (NICE, 2022). For example, individuals living with overweight or obesity, have an increased risk of experiencing physical health conditions such as diabetes and cardiovascular disorders. Similarly, individuals with underweight have

an increased risk of malnutrition, hypotension, and mental health difficulties such as anxiety, low mood, and suicidality (NICE, 2017).

An association between body weight and mental health difficulties exists across the spectrum of weight and body shapes, although this appears to be more pronounced for those who are underweight or overweight (Mond et al., 2011). In a systematic review and meta-analysis of longitudinal studies, obesity was found to increase the risk of depression and depression was found to be associated with developing obesity (Luppino et al., 2010). Furthermore, mood and mental wellbeing can be negatively impacted by weight stigma and low self-esteem which have been associated with weight gain (Tomiyama et al., 2018). Mond et al. (2011) also recognised that the association between body weight and mental health may be due to body dissatisfaction, weight stigma, and the presence of disordered eating behaviours. For individuals with mental health difficulties, low mood can affect adherence to weight management practices and food may be used as a coping strategy (Lemstra et al., 2016).

Eating Disorders

Eating disorders are characterised by negative beliefs and behaviours which individuals have about their weight, eating, and body shape (NICE, 2017). Eating disorders can affect how individuals perceive themselves and can lead to problematic eating patterns such as restrictive eating, binge eating, and compensatory behaviours such as vomiting or excessive exercise (NICE, 2017). The combination of different symptoms and presentations are associated with several different diagnoses, such as anorexia nervosa, bulimia nervosa, binge-eating disorder (BED), and eating disorder not otherwise specified (EDNOS). Oftentimes,

individuals with a diagnosis of an eating disorder may experience severe physical and mental health problems and they may have an abnormally high or low BMI (NICE, 2017). For example, individuals with anorexia often have a BMI classified as underweight, whereas BED has been strongly associated with obesity (Agüera et al., 2020). Treatment for eating disorders depend upon the specific diagnosis, however they may include nutritional education and support with a focus on developing healthier lifestyles, psychological therapies, medication, and medical intervention (NICE, 2017).

Challenges for Weight-Related Healthcare

Reducing obesity is a national priority due to the significant health risk to individuals and the extensive cost of obesity-related care (PHE, 2017a). Research highlights that individuals with an eating disorder or weight problem are more likely to require healthcare services for physical and mental health concerns (Hart et al., 2011). However, for treatments to be effective it is essential that they are accessible, available, and appropriate (Holt & Hughes, 2021). Individuals may under-utilise available services by not seeking help from relevant sources of support (Holt & Hughes, 2021) or because the services are impractical and inaccessible for people who experience systemic barriers to healthcare (DeCamp et al., 2022). These systemic barriers are recognised as the social determinants of health and they encompass individual and population level factors such as financial restraints, language and cultural differences, housing, social inclusion, education, and employment insecurity, all of which can impact upon health outcomes (Marmot et al., 2012). Oftentimes, once help has been sought, poor engagement and adherence to treatment provisions are reported (Ali et al., 2017). Therefore, understanding help-

seeking, the barriers to help-seeking, and service utilisation is an important first step in the effort to reduce weight-related physical and mental healthcare use.

The Role of Clinical Psychology in Weight Management

The British Psychological Society (BPS; 2019) highlighted that Clinical Psychologists are integral within weight management services to promote weight change and wellbeing. Furthermore, Clinical Psychologists can support the training of other health professionals to provide psychologically informed weight management support (BPS, 2019). Clinical Psychologists working in public health settings also have a role to develop community-wide and nation-wide interventions (Harper, 2016). These interventions are based on public health strategies to promote healthier lifestyles, and prevent weight related health concerns, through addressing polices, politics, and advertising (Flynn et al., 2006; Harper, 2016). These are known as "upstream" interventions as they aim to target populations rather than individualised healthcare (Flynn et al., 2006).

What is Help-Seeking?

Help-seeking is considered a complex construct which has been defined in several ways (Cornally & McCarthy, 2011; Rickwood & Thomas, 2012). Through consulting different definitions, Cornally and McCarthy (2011) noted that help-seeking is a process that occurs in response to a problem which may require additional assistance to improve or resolve the problem. This process involves actively pursuing and interacting with the additional assistance such as relevant services, provisions, or trusted people (Rickwood & Thomas, 2012). As such, help-seeking has been considered a form of coping with a difficulty and a problem-solving strategy (Mechanic, 1982; as cited in Rickwood & Thomas, 2012).

Help-Seeking Theories

Theories have been developed to understand how and why people seek help for specific difficulties. These theories have conceptualised the process of help-seeking, whilst other theories have been developed to understand why people seek help, what impacts help-seeking, and the psychological constructs which facilitate or impede help-seeking.

Within the literature, help-seeking was originally conceptualised as a multi-stage process (Murray, 2005) involving a series of decisions and actions (Saint Arnault & Woo, 2018). Several theories were developed, each sharing similarities in the understanding of how, where, and when individuals seek help for physical and mental health problems (Eiraldi et al., 2006). Veroff et al. (1981; as cited in Eiraldi et al., 2006) suggested a four-stage process of help-seeking which included (1) problem recognition; (2) deciding to seek help; (3) selecting an appropriate service; and (4) service utilisation. Similarly, Rickwood et al. (2005) presented a staged model for young people experiencing mental health problems, which included (1) awareness and assessment of the problem; (2) expression of the problem and need for support; (3) availability of sources of support; and (4) willingness to seek out and engage in support. Cornally and McCarthy (2011) recognised these stages as "antecedents" which need to be present for help-seeking behaviour to occur.

Whilst help-seeking process models are commonly presented in a staged or linear configuration, the research highlights that these stages are often interrelated and they can influence one another (Cauce et al., 2002). For example, the individual's perception of their perceived problem may change depending on the response they receive to seeking help (Cauce et al., 2002). This highlights the

complexity of help-seeking as a construct and possible confounding factors affecting the process of how people seek help.

Help-seeking theories have been further developed addressing factors which may impact upon each stage of the help-seeking process. Goldsmith et al. (1988; as cited in Eiraldi et al., 2006) emphasised the importance of cognitions within the decision-making processes, noting that individuals may use a cost-benefit analysis to consider the benefits and limitations of seeking help. Goldsmith et al. (1988; as cited in Eiraldi et al., 2006) also identified factors which may impact upon the recognition of a problem and the decision to seek help, such as the severity of the problem, social support, and barriers to seeking help.

A prominent model is the Behavioural Model of Health Service Use, originally developed by Andersen (1968; as cited in Andersen, 1995) and later revised multiple times (Andersen, 1995). The initial theory conceptualised that healthcare use is influenced by predisposing characteristics (demographic variables, social structure, and health beliefs), which facilitate or impede healthcare use and the need for care (Andersen, 1995). More recent revisions to the model have included feedback loops to explore how health behaviour is influenced by treatment outcomes (Andersen, 1995) and the inclusion of contextual factors, individual characteristics, health behaviours, and health outcomes (Andersen et al., 2013, as cited in Lederle et al., 2021). Eiraldi et al. (2006) highlighted that these factors enable a better understanding of the help-seeking process and provide information regarding predictors of treatment use. However, the literature highlights inconsistencies in the version of the model being used, which therefore presents inconsistencies in the findings due to differences in the variables being investigated (Lederle et al., 2021).

The evidence base highlights that help-seeking behaviour is a well-researched area, spanning across physical and mental health, different age groups, genders, and healthcare utilisation. However, there is little consensus and consistency in terms of how help-seeking is measured. Additionally, despite the extensive number of models and frameworks, there is not a unifying model bringing together different ideas and these models are often descriptive (Rickwood et al., 2005). Due to this, findings are often contradictory and may not offer explanations regarding what influences and impacts help-seeking (Rickwood et al., 2005).

Factors Impacting Help-Seeking

Help-seeking behaviour can be positively or negatively impacted by a range of factors, increasing or decreasing the likelihood of actual help-seeking. Existing systematic reviews have explored the factors which impact help-seeking for mental health difficulties (Hom et al., 2015) and physical health conditions (Knoetze et al., 2023). Nagai (2015) found through a longitudinal study, that the perception of needing help and social support can increase the likelihood of help-seeking, whereas psychological factors such as low mood and low motivation can impede help-seeking. Research also suggests that social determinants of health are important factors impacting help-seeking. Campbell and Long (2014) highlighted the importance of culture and culturally shaped beliefs on help-seeking for depression. Moreover, gender has been identified as a factor impacting help-seeking; where individuals who identify as female are more likely to seek help (Rickwood & Braithwaite, 1994). However, gender impacting help-seeking is not consistently found in the literature (Nagai, 2015).

Help-Seeking for Weight Management

Research exploring help-seeking behaviour for weight management has included young people (Truby et al., 2011) and adult populations (Salemonsen et al., 2018). Recent systematic reviews have explored the perceived barriers and facilitators to help-seeking for eating disorders (Ali et al., 2017) and barriers specifically for men with eating disorders (Bomben et al., 2022). However, these systematic reviews investigated treatment seeking for eating disorders rather than weight management specifically. Currently, there is no systematic review relating to help-seeking for weight management. Therefore, there is a knowledge gap regarding help-seeking for weight management, encompassing weight loss, gain, or maintenance. It is important to address each purpose of weight management, to understand how people can be supported to seek help for any weight-related health concern for differing purposes, as the needs of the users are likely to differ.

Rationale for the Scoping Review

A scoping review has been proposed to explore help-seeking for weight management. A scoping review aims to identify and provide an overview of relevant literature, particularly regarding a complex area, and to identify gaps in knowledge (Arksey & O'Malley, 2005). Weight management and help-seeking are complex and multifaceted concepts which encompass population health, healthcare use and public funding for weight-related healthcare. The current evidence base is compiled of studies which have used a range of methodologies; scoping reviews are useful for mapping literature where there is heterogeneity (Arksey & O'Malley, 2005). However, it is important to explore how these methodologies contribute to the understanding of help-seeking for weight management as well as considering the reliability and validity of the findings.

Clinical Implications

Synthesising research regarding help-seeking for weight management has several clinical implications for clinical and health psychology, and public health. For example, this review could offer important contributions to the understanding of who, why, when and how individuals choose to seek help for weight difficulties. It may also highlight populations who may find current services inaccessible or inappropriate for their needs. This further contributes to understanding what services are required and utilised most frequently as well as service development opportunities to increase help-seeking and improve health outcomes.

Aims

This scoping review aims to answer the following questions:

- What are the barriers and facilitators for help-seeking for weight management?
- What are the similarities and differences of help-seeking behaviour for the different purposes of weight management?
- What methodology has been used to investigate help-seeking for weight management?

Method

The Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping reviews (PRISMA ScR) checklist (Tricco et al., 2018) and the Joanna Briggs Institute (JBI) scoping review best practice guidance (Peters et al., 2015; Peters et al., 2020a), was consulted when conducting and writing this scoping review. An aim of a scoping review is to summarise and map a specific area of research (Pham et al., 2014), therefore this scoping review will gather relevant

quantitative, qualitative, and mixed-methods studies and any relevant systematic reviews.

Protocol Registration

The objectives, eligibility criteria, and methods for this scoping review are documented in a protocol and registered with Open Science Framework (OSF) (https://doi.org/10.17605/OSF.IO/WT482).

Search Strategy

A systematic search was conducted using a three-stage approach (Peters et al., 2015; Peters et al., 2020a). Initially, preliminary searches of keywords relating to help-seeking and weight management were conducted in November 2022 using Google Scholar and Scopus. During this search, titles, abstracts, and index items were analysed, and keywords were identified which informed the final search terms. The preliminary search also involved checking Prospero and OSF for any similar reviews. In December 2022, systematic searches were conducted using three electronic databases (Scopus, MEDLINE and PsycINFO). The search included articles published up to 16th December 2022. Thirdly, the reference lists of relevant studies were manually screened to identify any additional studies.

The criteria for the search terms were constructed based on the PCC (population, concept, context) mnemonic; recommended for scoping reviews as an enabler for a clear review focus (Peters et al., 2020a). The search terms used are presented in Table 1. The context being researched is weight management, which includes weight gain, loss, and maintenance. The concept being researched is help-seeking and also includes barriers and facilitators to help-seeking. Help-seeking is operationalised using the stages of help-seeking behaviour described by Veroff et al.

(1981; as cited in Eiraldi et al., 2006): problem recognition, decision to seek help, service selection, and service utilisation. This specific process model was chosen as it encapsulates the stages proposed in several help-seeking process models and provides an easy to use framework for conceptualising help-seeking. The population (adults) was not included during the search but was used during the study selection process. The * symbol was used for truncation and OR and AND were used to combine search terms. See appendix A for the full search strategy used.

Table 1

Search terms

Context	Concept
Weight manage*	Help seek*
Weight los*	Seek* help
"Weight gain"	Seek* treatment
Obes*	Barrier
Underweight	Enabl*
"Excess weight"	Facilitator
Overweight	Healthcare seeking
Diet	Healthcare utilisation
Body weight	
BMI	
Weight control	

Eligibility Criteria

The eligibility criteria was developed to reflect the PPC mnemonic. Studies were included if they met the following criteria: (i) the population were adults aged 18 and above; (ii) individuals seeking help explicitly for weight management support (weight loss, gain or maintenance); (iii) studies published in the English language. Studies were excluded if: (i) the population were under 18 years old; (ii) individuals were seeking help but not specifically in relation to weight (e.g. physical or mental health condition, non-specific help for eating disorders); (iii) the study did not describe help-seeking.

Study Screening and Selection

After searches had been conducted, they were imported into the reference manager, Rayyan, and duplicates were removed. The author manually screened titles and abstracts for relevant studies and excluded those that did not fit the eligibility criteria. Then, a full text screen was completed to identify relevant studies. An independent second reviewer also completed a full text screen of 25% of the studies, which were chosen at random. Consensus on study eligibility was achieved through discussion between the first and second reviewer. The second reviewer was unable to identify eligibility of two studies, due to the type of help-seeking being ambiguous particularly where help-seeking for eating disorders was studied. Therefore, it was agreed that the exclusion criteria needed to be adjusted to reflect this. The studies were excluded due to it being unclear if they included help-seeking explicitly for weight management. Interrater reliability between the author and second reviewer was 84.6%.

Data Extraction and Synthesis

Extracting relevant data from eligible studies for a scoping review is known as data charting (Peters et al., 2015). This process uses a form or table to record characteristics of the studies which, in turn, provides a narrative summary of the results in relation to the objectives of the review (Arksey & O'Malley, 2005; Peters et al., 2015). In this scoping review, charting was recorded using Microsoft Excel. Study details included: author, year of publication, location, aims, methodology, sample demographics, context, findings, and the help-seeking concept (definition, measures, help-seeking process/behaviour, barriers and facilitators). Additionally, the purpose of the weight management was recorded (weight loss or gain) as well as highlighting studies which included participants with eating disorder diagnoses. A condensed version of the charting table is presented in Table 2. The full charting form is available in appendix B. Charted data was also synthesised into meaningful and logical themes and described narratively to address the objectives of the review (Arksey & O'Malley, 2005; Kazi et al., 2021).

Finally, scoping reviews aim to provide an overview of a specific research area, regardless of the methodological rigor of the literature and as such they do not typically include a formal quality appraisal or use a risk of bias tool (Peters et al., 2020b). Therefore, this scoping review will not include the use of a formal risk of bias tool to appraise the quality of the included studies. However, this review will provide a critical perspective of the methods described by the included studies.

Results

Study Selection

The systematic search strategy, conducted in December 2022, retrieved 1812 potentially relevant articles. An additional 16 articles were yielded through manual

forward citation searches and backward reference list searches. After duplicates

were removed, 1187 articles were screened by the author, based on title and

abstract. From this, 50 articles were included in the full text screen; 18 articles were

excluded, resulting in 32 articles being included in this review. The flow of articles

through the study search and selection process is displayed in the PRISMA-ScR

diagram in figure 1 (Tricco et al., 2018) along with exclusion reasons.

Figure 1

PRISMA-ScR Flow Diagram
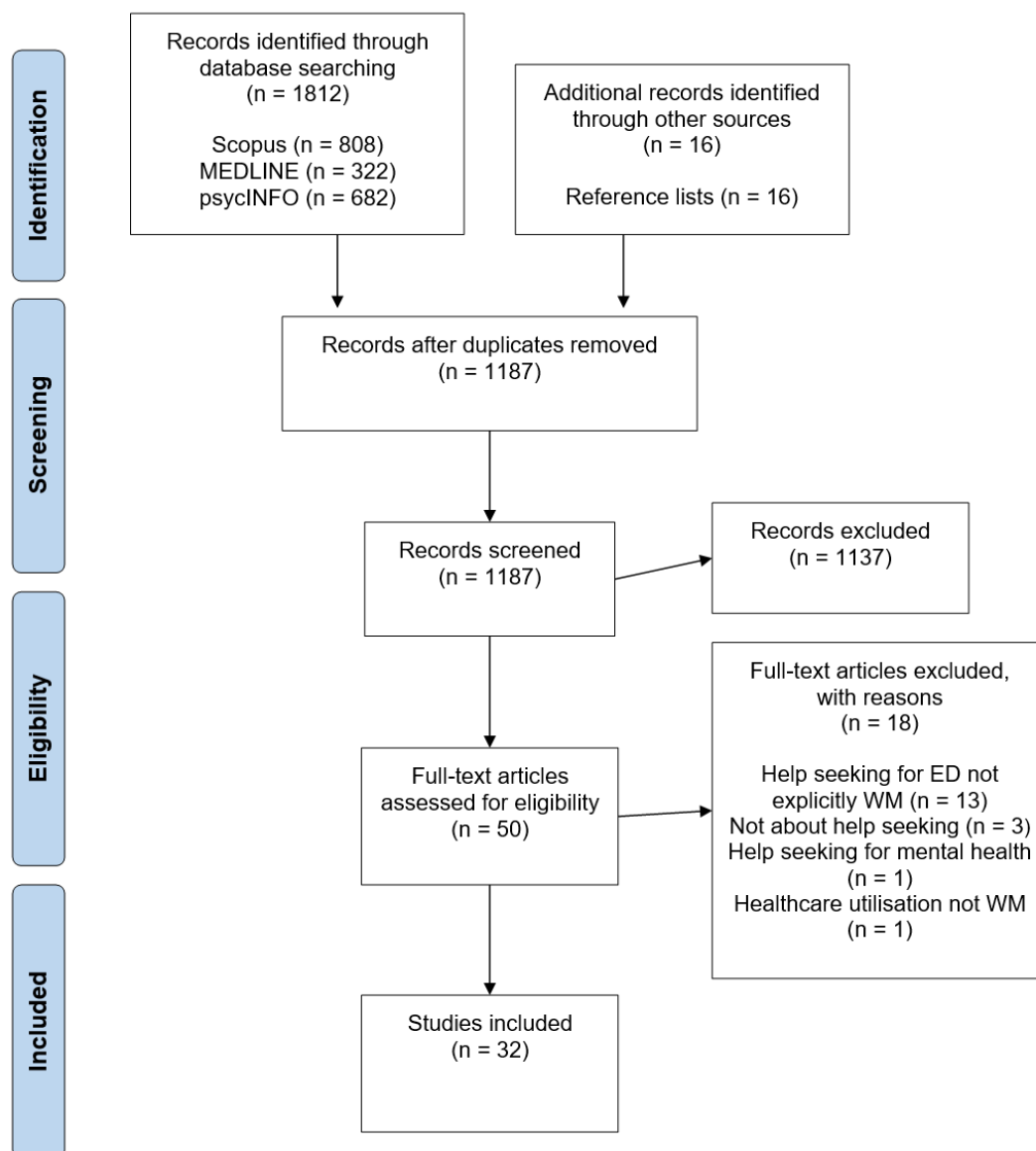
Study Characteristics

The majority of the studies were cross-sectional, whilst one study used a longitudinal design. Overall, 21 studies used quantitative methods, five used qualitative methods, five used mixed methods, and one was a systematic review. Study characteristics and a brief summary of each study are displayed in Table 2.

All the studies which gathered quantitative data used a survey methodology, through questionnaires and interviews; four of these studies utilised data extracted from national health surveys. This included self-reported participant demographic data (age, weight, height, income, ethnicity), current and historical health concerns, and specific questions for help-seeking for weight management. All studies using qualitative methods gathered data through semi-structured interviews. A range of data analysis methods were used including content analysis, grounded theory, framework analysis, thematic analysis and the delphi methodology. Studies using mixed methods collected data through telephone interviews, questionnaires, or both.

The studies included 18451 participants in total, from six countries: United States, United Kingdom, Norway, Australia, Switzerland and the Netherlands. The sample size in studies ranged from 14-4585. Participants in the studies age ranged from 18-73 years old and participants reported BMI ranged from 14.5-76. Overall, nine studies presented female-only samples, two studies presented male-only samples, and the remainder presented mixed-sex samples.

There were four main ways that the samples of the studies were derived: participants actively seeking weight management support (*k*=5), participants responding to research opportunities into eating, body image and weight (*k*=13),

participant data derived from national health surveys (k=4), and participants sharing their experiences of weight management and help-seeking (k=9). Methods of sampling participants included convenience sampling (k=14), purposive sampling (k=10), probability sampling (k=3), random sampling (k=2), stratified random sampling (k=1) and quota sampling (k=1). All five qualitative studies in the review used purposive sampling. Whereas quantitative studies and mixed-method studies varied in the sampling approach used.

Table 2

Summary of Articles and Study Characteristics

	Author(s) Year Location	Aim	Seeking weight loss/gain or ED cohort	Population	Design and Methodology	Main findings
1	Adams (2008) USA	Explored the lived experience of weight loss and the processes experienced in formal weight loss	Loss	Women (aged 50-68) participating in WMP BMI 27-40 N=14	Qualitative Grounded theory Semi-structured interviews	Substantive theory for successful WM emerged with three phases: engaging (seeking help), internalising and keeping one's commitment.
2	Ali et al. (2020) Australia	Investigated help-seeking attitudes, behaviours, intentions and perceived barriers for eating disorder symptomatology and weight concerns	ED (AN, BN, BED, EDNOS)	Adults (aged 18-25) BMI 16-32 N=291	Quantitative Online survey	73% did not think that they needed help. 36% has sought help for eating, weight or shape concerns. Higher help-seeking for AN and BN compared to BED and EDNOS
3	Annuniziato & Lowe (2007) USA	Investigated variables that are associated with differences in help-seeking for weight loss	Loss	Women (aged 21-65) BMI >25 N=120	Quantitative Questionnaires Help-seeking defined as dichotomous and continuous	Help-seeking as a dichotomy: only obesity related knowledge associated with help-seeking. Help-seeking as a continuous variable: obesity related knowledge, higher rated psychological distress, eating behaviours and concerns of body image were associated with help-seeking.

4	Annunziato et al. (2007) USA	Examined differences in help-seeking for weight loss between African American and White American women	Loss	Women (aged 21-65) BMI > 25 N=120 58% African American 42% White American	Quantitative Questionnaires	White American women more likely to seek help, join weight loss programs and cut calories. African American women more likely to use herbal supplements and self-help. Elevated scores of body image, eating behaviours, disinhibition and hunger scales predicted help-seeking from professionals for White American women.
5	Bohrer et al. (2017) USA	Identified variables most predictive of treatment seeking for ED	ED (AN, BN, BED)	BMI <18.5-≥30 N=595	Quantitative National surveys data	Men had a lower probability of treatment seeking. Study unable to distinguish treatment seeking for eating problems or weight problems. Comorbidity, religious belongingness, family cohesion and suicidality did not predict treatment seeking.
6	Bunt et al. (2017) Netherlands	Investigated factors associated with need for help with weight loss	Loss	Adults BMI≥25 N=4220	Quantitative Data from the Dutch Health Monitor 2012 survey	24.9% indicated a need for help for weight loss, 6.4% had already received help and 68.7% expressed no need for help. Men and women differed in their need for help; women more likely to indicate a need for help. Different factors predicted need for help for men and women.
7	Cachelin & Striegel-Moore (2006)	Examined the correlates of treatment-seeking for Mexican American and	ED	Mexican American women (N=76)	Mixed methods Phone interviews	73.8% reported significant eating problems, 69% wanted help, 27.6% had sought help.

	USA	European American women with ED	(AN, BN, BED, EDNOS)	European American women (N=69) with ED		Mexican American women less likely to seek help.
8	Cachelin et al. (2001) USA	Explore barriers to treatment for ethnically diverse women with ED	ED (AN, BN, BED, EDNOS)	Women (19-43) BMI 14.5-65.3 N=61	Mixed methods Telephone interview and postal questionnaire	82.5% wanted treatment for an eating problem, 57% sought treatment and 43% had never sought treatment.
9	Cachelin et al. (2006) USA	Examined factors associated with treatment-seeking for Mexican American and European American women with ED	ED (AN, BN, BED, EDNOS)	Mexican American women (N=80) European American women (N=110)	Quantitative Telephone questionnaires	Treatment seeking associated with having bulimia, frequent purging, ethnicity (European American), longer duration of ED and psychiatric comorbidity. European American women three times more likely to seek help. More likely to seek help for bulimia. Identification and treatment of ED was associated with ethnicity, lower BMI and earlier age of onset.
10	Ciao et al. (2012) USA	Investigated treatment seeking for weight-loss and barriers that could prevent treatment seeking	Loss	Adults BMI≥25 N=154	Quantitative Online survey	76.9% reported attempting to lose weight on their own, 47% tried self-help books, 42% contacted a doctor, and 39% tried a commercial programme.
11	Coffino et al. (2022) USA	Investigated ethnic/racial differences in weight-loss treatment utilisation for people with obesity and BED	Loss	Adults BMI≥30 N=400	Semi-structured interviews	Self-help diets most frequently used treatment. Treatment through mental health professionals was the least frequent method. Non-hispanic white participants were more likely to use supervised diets than non-

						hispanic black participants and Hispanic participants.
12	De Heer et al. (2019) USA	Examined the proportion of people who reported help-seeking for weight loss after being advised to by an HCP.	Loss	Adults BMI≥25 N=3862	Quantitative Data from the 2011-2012 National Health and Nutrition Examination Survey	51.8% had had weight loss recommended to them by an HCP. Of these participants, 68.6% attempted to lose weight but only 10% sought weight loss support from HCP.
13	Doyle et al. (2012) USA and UK	Investigated willingness to pay (WTP) for different attributes of weight loss medication for adults seeking weight loss support	Loss	Adults BMI 30-45 N=502	Quantitative Questionnaire	Higher WTP for total weight loss, fewer side effects and avoiding changes to their lifestyle and placed less value on reducing health conditions. 90% attempted to lose weight, 31% UK participants had sought help from a GP compared to 14.7% USA participants. 24.7% had taken prescribed medication to lose weight.
14	Evans et al. (2011) Australia	Explored barriers to help-seeking amongst women with an ED	ED (BN, BED, EDNOS, sub-clinical ED)	Women N=57	Mixed methods Questionnaire and interview	88% reported trying to lose weight in the previous 12 months. 75% reported seeking help specifically for weight loss. Whilst help-seeking was low, participants mainly sought help through GPs.
15	Fitzsimmons-Craft et al. (2020)	Investigated AN psychopathology, help-seeking and barriers to	ED (AN)	College students (aged 18-34)	Quantitative Longitudinal design	33% reported already receiving treatment for AN, 26% initiated treatment since

				N=61	Questionnaire (repeated at nine month follow-up).	receiving the referral and 41% did not initiate treatment.
	USA	treatment for college students				Reasons for help-seeking included emotional distress, concerns with eating and health concerns.
16	Fontaine (1999)	Examined what factors predict help-seeking for overweight	Loss	Adults seeking or not seeking weight loss treatment N=172	Quantitative Questionnaire	Higher reported weight, being female, older and of white race were predictive of treatment seeking.
17	Hart et al. (2011)	Investigated the proportion of individuals with an ED who seek treatment.	ED (AN, BN, BED, EDNOS)	Predominantly female-only samples One study male-only sample	Systematic review 14 studies included	Combined proportion of treatment seeking was 23.2%. Help-seeking for weight loss ranged from 30% to 73%. More likely to receive weight loss treatment than mental health treatment for ED symptomatology.
18	Holt & Hughes (2021) UK	Explored patient and professional perspectives of the barriers and facilitators to WM services	Loss	Patients and HCPs involved in obesity care from primary and secondary care services N=19	Qualitative Semi-structured interviews and a delphi methodology online consensus survey	Barriers included obesity not being considered a serious condition, lack of access to services, negative perceptions, low mood. Facilitators included improved referral processes, improved communication and joined up care, and education around obesity and its management.
19	Klingemann et al. (2016) Switzerland	Comparison of weight loss with and without professional help for individuals who had	Loss	Successful self-changers (N=37)	Mixed methods Interview	51% had sought professional help to lose weight. Women were more likely to seek professional help.

		successful or unsuccessful weight loss		Unsuccessful self-changers (N=28) Successful help-seekers (N=24) Unsuccessful help-seekers (N=44)		Strategies used to lose and maintain weight loss are similar for self-changers and help-seekers
20	Mond et al. (2007) Australia	Examined use of health services for women with ED including type of treatment and variables associated with treatment-seeking.	ED (AN, BN, BED, EDNOS)	Women (aged 18-42) N=159	Quantitative Questionnaire and interview	72.8% had treatment for their weight (predominately weight loss)
21	Munoz et al. (2007) USA	Explored factors associated with seeking bariatric surgery	Loss	Adults BMI 35-76 N=109	Mixed methods Questionnaires	Primary reasons: medical health (73%), prevent future health issues (16%), self-esteem (3%), social aspects (3%), improve activity (1%). 73% sought help due to current health conditions and preventing future health conditions.
22	Murray et al. (2021) Australia	Investigated attitudes towards psychological support for WM	Loss	Adults BMI≥25 N=136	Quantitative Online survey	Psychologists rated third most preferred provider. 6% reported seeing a psychologist for weight loss.

23	Ndebele (2014) UK	Explored views of WM and healthy eating by men	Loss	Men N=84	Quantitative Questionnaire	3.6% reported they would seek help from a doctor for WM, 58% would seek help from friends and family, 38% would use the internet, 35% would use a leisure centre. Motivators to seek help for weight loss include health problems and improving appearance. Preference for physical activity to aid weight loss.
24	Ogden (2000) UK	Investigated differences between individuals who had maintained successful weight loss, lost and regained weight and those unsuccessful at losing weight.	Loss	Women Three groups: Stable obese (N=58; BMI 30+) Weight loss regainers (N=40; BMI was <30, now 30+) Weight loss maintainers (N=44; BMI<30)	Quantitative Questionnaire	Weight loss maintainers dieted for longer, ate healthier and were more motivated to lose weight for psychological reasons. Psychological model of obesity more predictive of weight loss.
25	Reas et al. (2004) USA	Explored reasons for treatment seeking for obese adults with BED	ED/loss (BED)	Adults BMI≥30 N=248	Quantitative Questionnaire and interview	Primary reason for treatment seeking: health (64%), appearance (36%). Appearance group reported greater body dissatisfaction, and higher scores on the eating disorder examination questionnaire.

26	Salemonsen et al. (2018) Norway	Explored experiences of living with obesity and help-seeking for WM	Loss	Adults from Healthy Life Centres N=13	Qualitative – content analysis Semi-structured interviews	Main theme: "searching for dignity" Secondary themes: needing to justify avoidance of personal responsibility and a desire to change. Help-seeking triggered by health concerns, illness and preventing ill health.
27	Stokes et al. (2018) USA	Estimated engagement in obesity care and associated determinants	Loss	Adults (aged 30-64) BMI≥30 N=4585	Quantitative Data from 2005-2012 National Health and Nutrition Examination Survey	Developed a cascade model to quantify engagement: perceiving being overweight, wanting to lose weight, trying to lose weight (previous 12 months), help-seeking from an HCP, help-seeking from a physician. 6.4% sought help from an HCP but not a physician. 51.3% tried to lose weight without seeking professional help.
28	Tod & Lacey (2004) UK	Explored factors impacting people taking action about their weight.	Loss	Weight loss group members (N=11) and facilitators (N=5)	Qualitative Semi-structured interviews Framework analysis	Process of help-seeking mirrored the stages of change model. Belief that they needed to be in the "right frame of mind".
29	Tol et al. (2014) Netherlands	Examined predisposing factors that may influence readiness to lose weight and intention to use weight-related care.	Loss	Dutch Health Care Consumer Panel with elevated weight-related health risk N=445	Quantitative Online survey	55% ready to lose weight. 82% preferred self-sufficient weight loss techniques. 11% intended to use weight-related care.

30	Visram et al. (2009) UK	Explored perceptions of weight gain and help-seeking for weight loss	Loss	Adults from a WMP N=20 BMI≥25	Qualitative Semi-structured interviews	Weight gain perceived as linked to life events that impacted appetite and activity levels, rather than directly linked to over-eating and inactivity.
31	Wolfe & Smith (2002) USA	Examined what factors motivate men to seek WM treatment.	Loss	Males BMI >27 N=72	Quantitative Questionnaire	Reasons to seek treatment: improve fitness/strength, appearance, health concerns. 12.5% would consider seeking medical support, 6.9% commercial programmes, and 5.6% psychology clinics.
32	Yoong et al. (2013) Australia	Examined the proportion, characteristics and intentions of patients seeking WM	Loss/ gain	Primary care patients (aged 18+) BMI≥18.5 N=1306	Quantitative Questionnaire	56% intended to lose weight, 3% intended to gain weight, 36% did not intend to change weight in the next size months, 5% were unsure. 66% reported wanting support to lose weight from care providers. Obese patients 20 times more likely to want to lose weight,.

Note: WM: weight management, WMP: weight management programme, HCP: healthcare professional, GP: General Practitioner,

ED: eating disorder, BN: bulimia, AN: anorexia, BED: binge eating disorder, EDNOS: eating disorder not otherwise specified, BMI:

body mass index.

Purpose of Weight Management

The review identified that the literature encompassed studies which focused on weight loss, weight gain, and weight maintenance. These studies have also included samples of participants who have a current or historical eating disorder diagnosis. At a majority, 21 studies in the review represented help-seeking for weight loss, where participants presented elevated BMI's (above 25). One of these studies represented help-seeking for weight loss through seeking bariatric surgery (Munoz et al., 2007). None of the studies represented help-seeking solely for weight gain.

Furthermore, 10 studies in the review researched help-seeking for weight management amongst participants with eating disorder diagnoses. The eating disorder diagnoses included anorexia, bulimia, BED, and EDNOS and reported BMI's ranged from <18 - >30. In seven of these studies, the authors referred to help-seeking for weight management or weight concerns. However, these studies did not specify if the participants were aiming to lose, gain, or maintain weight. In one study, participants with a BED diagnosis aimed to lose weight. In two of the studies, participants with anorexia, bulimia, BED, and EDNOS diagnoses aimed to lose or gain weight. None of the studies with an eating disorder population described participants solely aiming to gain weight, despite the participants presenting very low BMI scores. In the seven studies which did not specify the purpose of the weight management, the researchers typically asked participants if they had sought help for an eating or weight concern. These studies were included in the review as eating and weight concerns are closely related and the results of the studies reflected that participants wanted help to manage their weight concerns (Ali et al., 2020; Evans et al., 2011).

Help-Seeking

In 26 of the studies, researching help-seeking behaviour was the primary aim and focus of the study. For the remaining six articles, researching help-seeking behaviour was a secondary or tertiary aim, or an outcome of the study. For example, help-seeking was identified as a theme from a grounded theory qualitative study when exploring the process of weight loss (Adams, 2008). Additionally, Holt and Hughes (2021) used a qualitative approach to explore patient and professional perspectives of the barriers and facilitators to weight management services. This study identified how barriers can hinder help-seeking for individuals wanting to lose weight. Finally, Ogden (2000) identified the frequency of help-seeking through professional sources, however, the paper primarily aimed to identify methods used to lose weight.

Across the studies, help-seeking for weight management was referred in different ways. These include using phrases such as help-seeking, treatment seeking, need for help, treatment utilisation, and readiness to manage weight. Six of the articles stated that help-seeking involved consulting professional, formal and external support for weight management.

Furthermore, two studies referenced a help-seeking model, the transtheoretical model of behaviour change (stages of change; Prochaska & Velicer, 1997). Tol et al. (2014) used the stages of change model to conceptualise the process of readiness to lose weight for adults with weight-related health risks. Likewise, Tod and Lacey (2004) used the stages of change model to present the stages described by participants which were involved in taking action to lose weight. In this study, participants described a belief that they needed to be in the "right frame

of mind" to seek help. This finding was also reflected in Salemonsen et al. (2018) where a "mental process" of recognising a problem was identified.

Overall, five themes were identified which capture how help-seeking was researched and what the studies aimed to explore. These themes are presented in figure 2 and they include, engagement and utilisation of weight management provisions, participant factors associated with help-seeking, views and perspectives of participants, barriers and facilitators, and predicting help-seeking.

Figure 2

A Pie Chart Depicting the Aims of the Studies

A chart displaying how help-seeking was researched
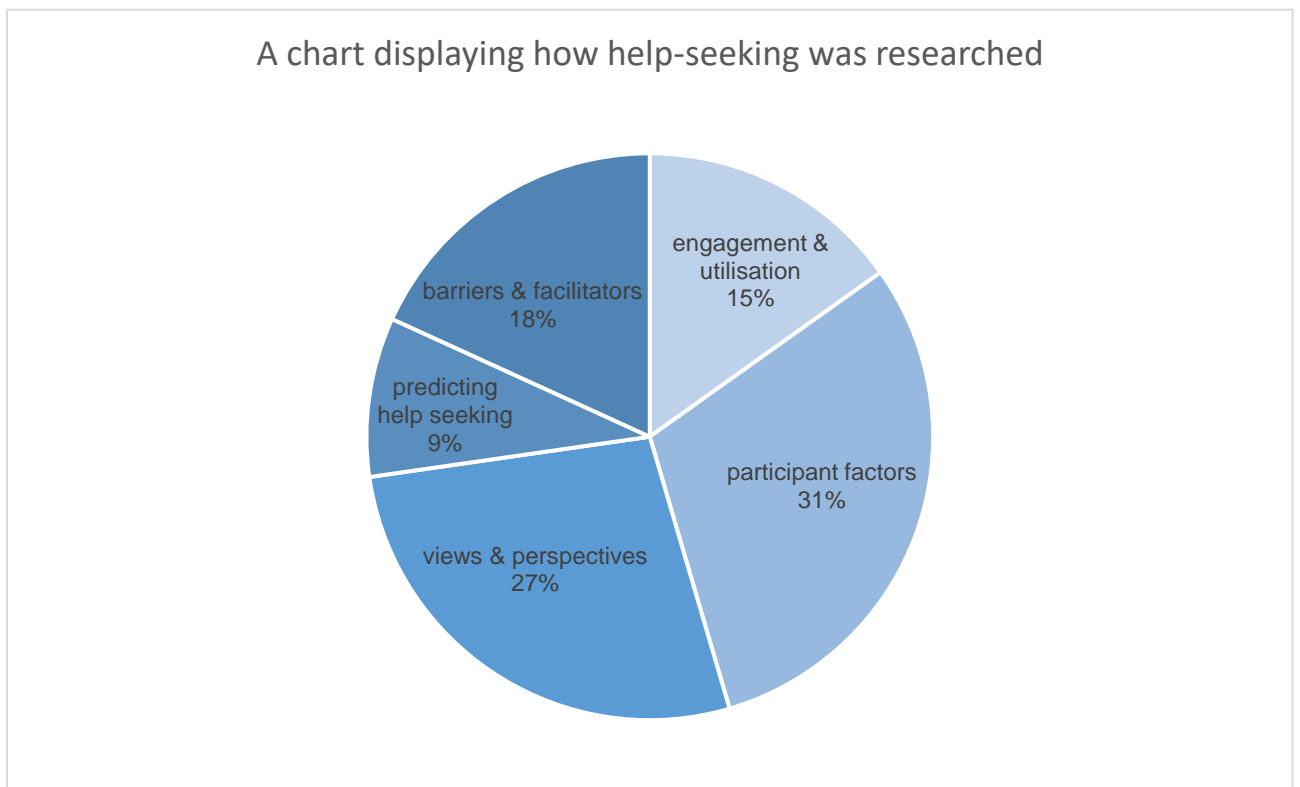
Methods of Measurement

Methods of measuring help-seeking ranged across the studies. Two studies utilised standardised measurement tools as they administered the General Help Seeking Questionnaire (Wilson et al., 2005) to assess intentions to seek help for
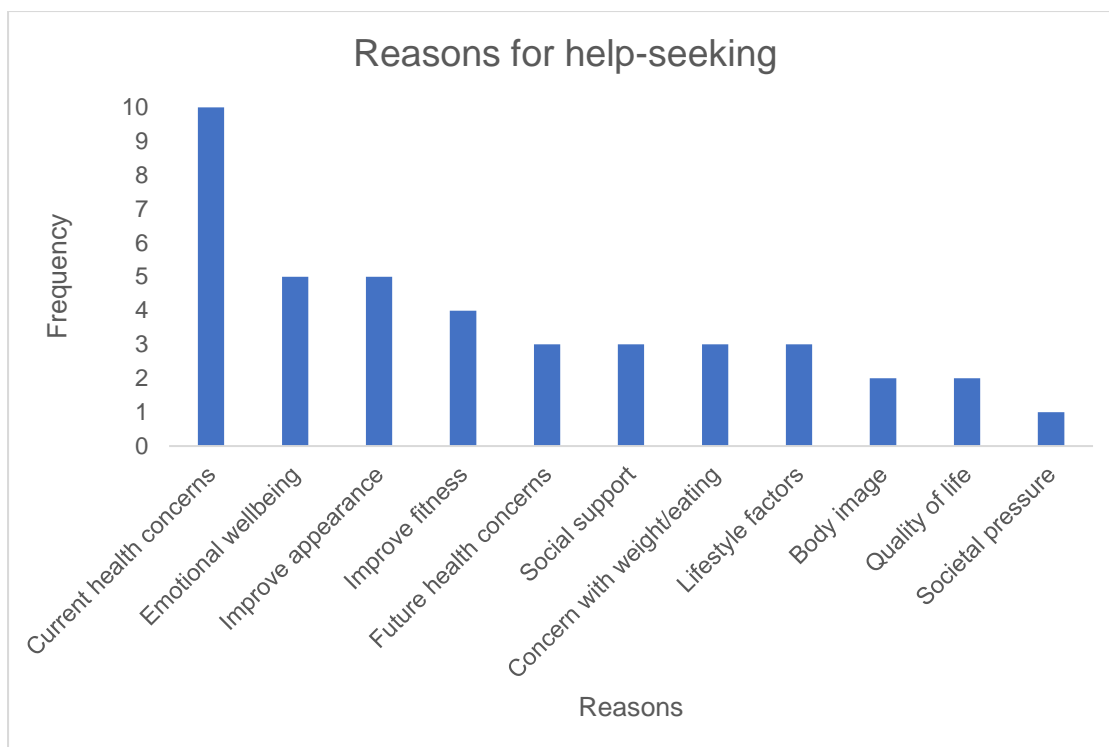
weight management (Ali et al., 2020; Murray et al., 2021). The General Help Seeking Questionnaire demonstrated adequate internal consistency (α=0.70-0.83) and predictive validity (Wilson et al., 2005). Ali et al. (2020) also administered the Actual Help Seeking Questionnaire (Rickwood & Braithwaite, 1994) and the Attitudes Towards Seeking Professional Psychological Help Short Form (ATSPPH-SF; Fischer & Farina, 1995). The ATSPPH-SF demonstrated good internal consistency and adequate validity (Fischer & Farina, 1995).

Reasons for Seeking Help

The reasons for help-seeking for weight management were explored by 12 studies (see figure 3). These studies included help-seeking for weight loss or managing weight concerns for participants with an eating disorder. The most frequent reason cited for help-seeking was due to current health concerns. This reason was particularly pertinent for participants seeking bariatric surgery, as 73% reported help-seeking due to their current health (Munoz et al., 2007). Participants also recognised wanting to improve their emotional wellbeing as a frequent reason to seek help as they expressed experiencing emotional distress and mental health concerns (Cachelin & Striegel-Moore, 2006; Cachelin et al., 2001; Fitzsimmons-Craft et al., 2020). Research conducted by Reas et al. (2004) sought to investigate reasons for treatment seeking for participants with BED. However, in this study, participants were asked to identify their primary reason, which suggests that other reasons may not be captured in the literature.

Figure 3

Reasons for Help-Seeking

Reasons for help-seeking (bar chart)

Y-axis: Frequency (0–10)
X-axis: Reasons

- Current health concerns: 10
- Emotional wellbeing: 5
- Improve appearance: 5
- Improve fitness: 4
- Future health concerns: 3
- Social support: 3
- Concern with weight/eating: 3
- Lifestyle factors: 3
- Body image: 2
- Quality of life: 2
- Societal pressure: 1

Sources and Providers

Different types of help-seeking sources and providers which participants identified could aid their weight management were described in 24 studies. These include seeking help from a General Practitioner (GP) or doctor (k=11), nurse or healthcare professional (k=8), weight management programmes (including commercial weight loss programmes; (k=7), psychologist (k=4), the internet (k=4), medication (k=4), dietitian (k=3), gym, leisure centre or personal trainer (k=3), surgery (k=2), a counsellor or psychotherapist (k=2), physiotherapist (k=2), self-help books (k=1) and hypnosis (k=1). Within the studies which reported on the frequency of actual help-seeking, this ranged from 6%-75%. Several studies also reported the frequency of wanting to seek help for weight management and this ranged from 3.6%-82.5%.

Participant Characteristics

Participant characteristics in help-seeking were examined in 10 studies. These included differences across gender (k=4), age (k=2), ethnicity (k=5), weight status (k=4) and the type of eating disorder diagnosis (k=2). Cachelin et al. (2006) found White American women were three times more likely to seek help than Mexican American women, and White American women were almost 10 times more likely to receive eating disorder treatment than Mexican American women. Annunziato et al. (2007) also reported help-seeking differences for different ethnic groups as they found that White American women were more likely to seek help and join weight loss programmes whereas African American women were more likely to attempt weight loss without professional support.

Several studies noted that men were less likely than women to seek help or treatment for weight loss (Bunt et al., 2017; Klingemann et al., 2016) and weight management for eating disorder presentations (Bohrer et al., 2017). This finding was established through data from two national health surveys (Bohrer et al., 2017; Bunt et al., 2017) investigating factors predictive of help-seeking, and through a comparison study of successful and unsuccessful weight loss (Klingemann et al., 2016). Finally, Fontaine (1999) identified that participants who presented a higher reported weight, were female, older, and of white race were more likely to seek treatment.

Barriers to Help-Seeking

Barriers to help-seeking were explored in 12 studies; seven studies represented help-seeking for weight loss and five studies represented eating disorder populations. The barriers are factors which were identified as making help-seeking less likely. The findings were grouped into four categories as illustrated in
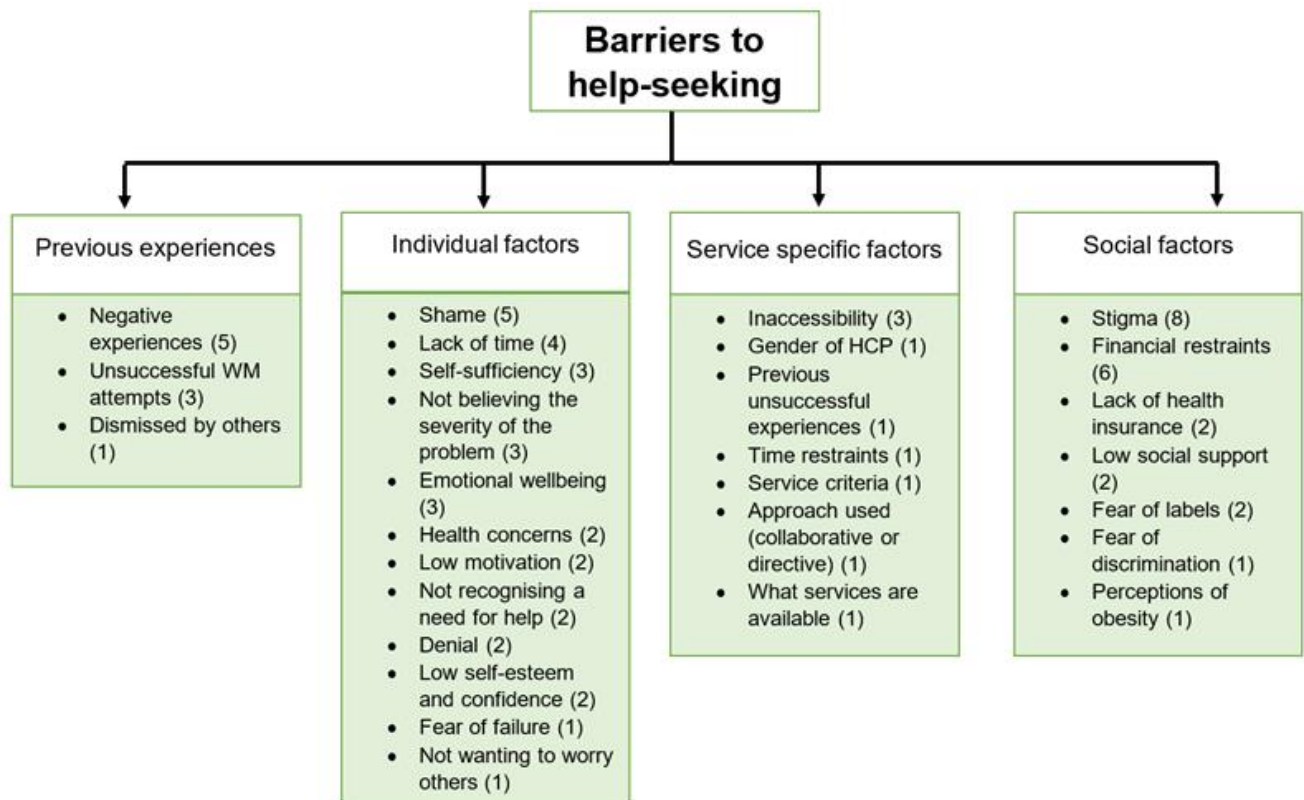
figure 4. The most frequently identified barriers to help-seeking were stigma, financial restraints, shame, previous negative experiences and a lack of time.

Across the studies, barriers to help-seeking were explored through interviews or questionnaires, using qualitative (k=4), quantitative (k=5) and mixed-methods (k=3) methodologies. One study utilised the Perceived Barriers to Psychological Treatment scale to explore barriers to help-seeking (Murray et al., 2021). Ali et al. (2020) devised a questionnaire in their study to explore barriers, known as the Barriers Towards Seeking Help for Eating Disorders Questionnaire. In five studies, participants were asked to reflect on barriers during the qualitative interview (Evans et al., 2011; Holt & Hughes. 2021; Salemonsen et al., 2018; Tod & Lacey, 2004; Visram et al., 2009). In four studies, participants were asked to endorse a list of barriers based on existing literature (Cachelin & Striegel-Moore, 2006; Cachelin et al., 2001; Ciao et al., 2012; Fitzsimmons-Craft et al., 2020).

Some studies recognised specific experiences which impacted upon help-seeking, such as previous unsuccessful weight loss attempts (Tod & Lacey, 2004; Tol et al., 2014; Visram et al., 2009), or being dismissed by others (Evans et al., 2011). However, some studies recognised the impact of fearing negative experiences, such as the fear of failure (Holt & Hughes, 2021), the fear of receiving a label of an eating disorder diagnosis (Cachelin & Striegel-Moore, 2006; Cachelin et al., 2001) or the fear of discrimination (Cachelin et al., 2001).

Figure 4

Barriers to Help-Seeking for Weight Management (number of studies identifying a factor in brackets)

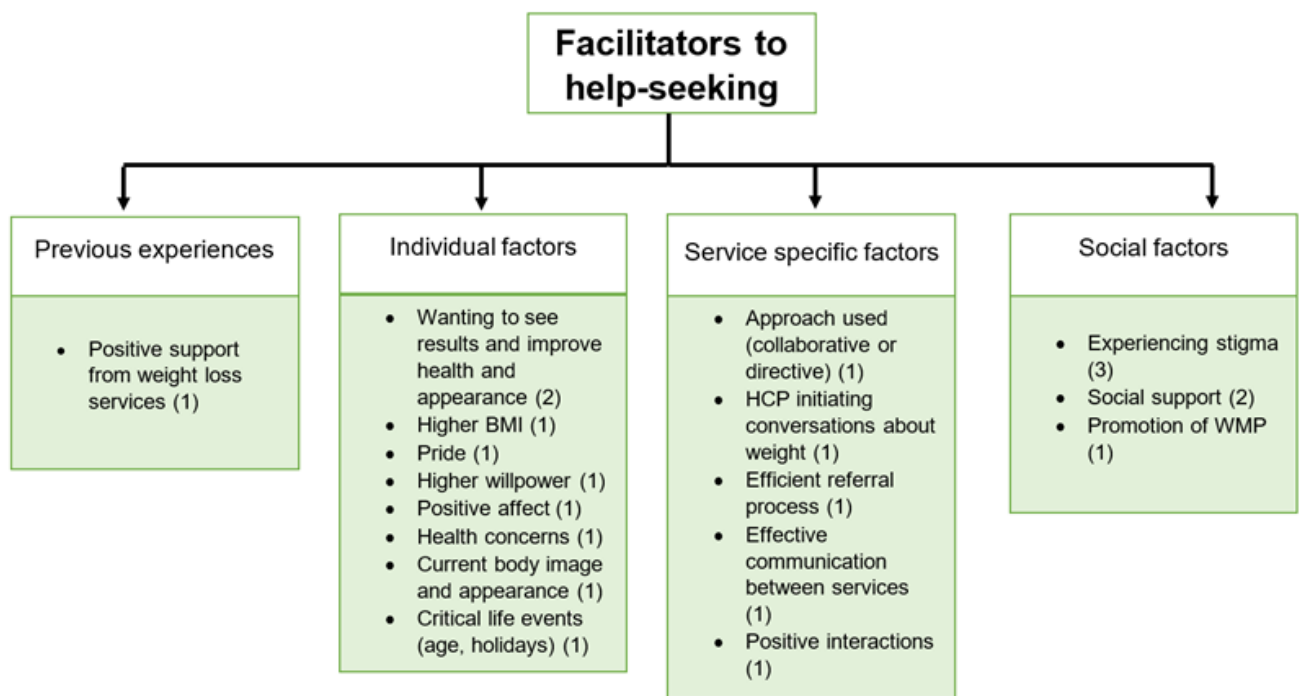| Barriers to help-seeking			
Previous experiences	**Individual factors**	**Service specific factors**	**Social factors**
• Negative experiences (5) • Unsuccessful WM attempts (3) • Dismissed by others (1)	• Shame (5) • Lack of time (4) • Self-sufficiency (3) • Not believing the severity of the problem (3) • Emotional wellbeing (3) • Health concerns (2) • Low motivation (2) • Not recognising a need for help (2) • Denial (2) • Low self-esteem and confidence (2) • Fear of failure (1) • Not wanting to worry others (1)	• Inaccessibility (3) • Gender of HCP (1) • Previous unsuccessful experiences (1) • Time restraints (1) • Service criteria (1) • Approach used (collaborative or directive) (1) • What services are available (1)	• Stigma (8) • Financial restraints (6) • Lack of health insurance (2) • Low social support (2) • Fear of labels (2) • Fear of discrimination (1) • Perceptions of obesity (1)

Facilitators to Help-Seeking

Facilitators to help-seeking were explored within six of the studies; five studies represented help-seeking for weight loss and one study represented a population with an eating disorder. Facilitators to help-seeking were explored through interviews (Evans et al., 2011; Holt & Hughes. 2021; Salemonsen et al., 2018; Tod & Lacey, 2004; Visram et al., 2009) or a self-report questionnaire (Ciao et al., 2012), using qualitative (*k*=4), quantitative (*k*=1) and mixed-methods (*k*=1) methodologies.

The facilitators are factors which participants identified as making help-seeking more likely. These factors are grouped into four categories and are illustrated in figure 5. These four categories include previous experiences of help-seeking, individual factors, service specific factors and social factors. The studies identified the importance of receiving social support and having experienced positive support from weight management providers to increase the likelihood of seeking help

(Doyle et al., 2012; Evans et al., 2011; Murray et al., 2021). Evans et al. (2011) also

highlighted the benefit of receiving further information from weight management

support providers such as leaflets and options for support. Several studies also

identified negative experiences and emotions, such as stigmatisation, low self-

confidence and health concerns as facilitators. Tod and Lacey (2004) recognised

that these factors could increase vulnerability for individuals experiencing difficulties

with their weight, and thus highlighted the importance of compassionate and

empowering care.

Figure 5

Facilitators to Help-Seeking (number of studies identifying a factor in brackets)

Similarities and Differences of Help-Seeking Behaviour for the Purpose of

Weight Management

When considering differences in barriers and facilitators to help-seeking, the

review found that shame was mainly identified as a barrier to help-seeking by studies

with eating disorder populations (Ali et al., 2020; Cachelin & Striegel-Moore, 2006;

Cachelin et al., 2001; Fitzsimmons-Craft et al., 2020). Only one study representing help-seeking for weight loss identified shame as a barrier to help-seeking (Ciao et al., 2012).

In one of the studies, differences amongst reported utilisation of services for weight treatment was reported. Mond et al. (2007) found higher rates of service utilisation for weight management for participants with a BED (87%), BN (70.6%) and EDNOS (74.1%) diagnosis compared to participants with anorexia (50%). However, the proportion of participants in the anorexia group was significantly smaller than in the other groups which may have impacted this finding.

The review also found similarities and differences in the methodologies used to research help-seeking. This depended on whether the sample were aiming to lose or gain weight and those participants who represented an eating disorder population. Quantitative methodologies were the most frequently used methodology for studies exploring help-seeking for weight loss and help-seeking amongst an eating disorder population.

Every study which used a qualitative methodology (k=5) explored help-seeking solely for weight loss, particularly focusing on the lived experience of obesity (Adams, 2008), help-seeking (Salemonsen et al., 2018; Tod & Lacey, 2004; Visram et al., 2009) and weight loss treatments (Holt & Hughes, 2021). Within the reviewed articles, qualitative methodologies where not used to explore help-seeking for weight management amongst an eating disorder population. However, three studies with an eating disorder sample utilised mixed methods where interviews and questionnaires aimed to explore help-seeking (Cachelin & Striegel-Moore, 2006) and barriers to help-seeking (Cachelin et al., 2001; Evans et al., 2011).

Discussion

The current review aimed to map the literature regarding help-seeking behaviour for weight management. This involved aiming to identify the barriers and facilitators to seeking help for weight management, the similarities and differences of help-seeking behaviours depending on the purpose of the weight management, and the study methodologies.

The review included 32 studies; this predominantly included studies exploring help-seeking for weight loss and very few studies explicitly recognised help-seeking for weight gain. This is despite the review including 10 studies with participants diagnosed with an eating disorder and low BMI. The review found that people mainly sought help for weight-related difficulties due to current health concerns, being motivated by their appearance, and emotional wellbeing factors. A range of help-seeking providers were identified where people planned to or had sought help including general practitioners or doctors, nurses, and weight loss groups.

The first aim of this review was to identify the barriers and facilitators to help-seeking for weight management. The barriers and facilitators were grouped into four distinct themes including previous experiences of help-seeking, individual factors, service specific factors, and social factors. The review identified that the studies predominantly focused on exploring barriers and there was less research on the facilitators. Tod and Lacey (2004) recognised that the barriers and facilitators identified in their study heavily related to participants sense of self, self-esteem, and confidence, stemming from negative experiences, judgement, and stigma. This was conveyed as a "vulnerability" which could mobilise, or immobilise, taking action to seek weight management support. Further research in this area could contribute

towards service development for weight management provisions. Specifically, focusing on empowerment and increasing confidence for people seeking support for their weight. Researching facilitators with larger and diverse samples could also help to gain a deeper and richer understanding of the prominent themes.

Many of the barriers to help-seeking identified in this review highlight health inequities and can therefore be understood as factors reflecting social determinants of health. Several studies highlighted the inaccessibility of services as a fundamental barrier to help-seeking for weight-related care. Research highlights that men appear less likely to seek help for their weight, however, evidence also suggests health inequity for gender where men expressed that weight-related care appeared targeted towards women (Elliott et al., 2020). Systemic disparities were also recognised by Cachelin et al. (2006) who found that White American women were almost 10 times more likely to receive eating disorder treatment than Mexican American women. Finally, many studies highlighted finances as a barrier (Evans et al., 2011). These findings emphasise the importance of improve health equity for disadvantaged and minoritised groups to improve weight-related help-seeking and health outcomes.

There is also recognition that many people with eating disorder symptomatology, eating concerns, or weight concerns have experienced barriers to seeking weight-related care. These barriers have included access to weight or eating related care which has been based on weight or BMI scores (Virgo, 2019). More recently there have been changes to clinical guidelines and widespread campaigns such as the "dump the scales" campaign which have challenged these barriers (Richards et al., 2022). Therefore, there may be a cohort who are underrepresented in the literature due to the systemic barriers to seeking help and receiving care.

The second aim of this review was to explore the similarities and differences of help-seeking presented for different purposes of weight management (weight loss, gain, maintenance). Overall, the review found several similarities but minimal differences. An interesting and surprising difference was that only one study identified shame as a barrier to help-seeking for people wanting to lose weight, but it was a commonly identified barrier amongst populations with eating disorder diagnoses. Research exploring weight-based stigma has highlighted that people described avoiding accessing healthcare, due to the fear of being shamed or stigmatised due to their weight (Alegria Drury & Louis, 2002). Shame has also been found to be barrier to help-seeking for mental health difficulties (Rüsch et al., 2014). In a systematic review, O'Loghlen et al. (2022) found that different types of shame (internal, external, bodily, and binge-eating-related) were associated with BED symptomology. Thus, it is unclear why this finding is not reflected within the reviewed studies, but it may be reflective of the samples used within the weight loss groups not having diagnosed eating disorders such as BED.

This review identified a research gap of studies exploring help-seeking for weight gain. In seven studies which consisting of participants with an eating disorder, there was ambiguity in terms of the purpose of the weight management (weight loss, gain, or maintenance). Three studies in the review investigated weight loss and weight gain, however, no studies looked just at help-seeking for weight gain. In these studies, participants were typically asked about their weight concerns including whether they wanted to lose or gain weight. Only one study reported on the percentage of the sample who wanted to gain weight (Yoong et al., 2013). Future research exploring help-seeking for weight gain is important as currently, there is no specific recognition of the experiences and impact of weight gain for adults.

Furthermore, living with underweight (BMI ≤18.5) poses significant physical and mental health concerns (Mond et al., 2011; NICE, 2017). Thus identifying this population and exploring how and where they might seek help for their weight is paramount.

The review found that there is gap in the literature investigating the process of recognising a problem and need for help, as well as decision-making processes for help-seeking. There is also limited literature using help-seeking models and theoretical frameworks to conceptualise help-seeking. These research gaps could be combined through using models and theoretical frameworks to explore different aspects of the help-seeking process. This could provide substantial insight into how people recognise their need for help and the psychological processes involved in deciding to seek help. This has already begun within different populations and contexts. For example, Liang et al. (2005) developed a theoretical framework to understand help-seeking processes amongst individuals who have experienced domestic violence. Similarly, Hammer and Vogel (2013) investigated the utility of help-seeking models to understand decision making for young adults experiencing mental health difficulties. Therefore, help-seeking models could be utilised within weight management.

Research Methods

All 32 studies included in this review researched help-seeking through using surveys, questionnaires and interviews. This ranged from large scale, national health surveys of up to 4585 participants to small scale qualitative interviews with sample sizes ranging from 13-20. Only two studies utilised assessment instruments to assess help-seeking behaviour with established psychometric properties (Ali et al.,

2020; Murray et al., 2021). The questionnaires used were the General Help Seeking Questionnaire (Wilson et al., 2005) and the ATSPPH-SF (Fischer & Farina, 1995). Both of these measures were adapted for use, which may impact upon the reliability and validity of the scores, in comparison to the population in which it was validated against (Hammer & Spiker, 2018). However, in these studies, the researchers made modifications to the wording of items, so they were interpreted appropriately within their sample population. This process can positively impact upon the meaning, reliability and validity of the measure (Stewart et al., 2012) as demonstrated by the adequate internal consistency reported by Murray et al. (2021).

The cross-sectional nature of the majority of the studies (k=30) may also impact upon the interpretation of the findings as help-seeking, and the associated variables, were not measured longitudinally (Bohrer et al., 2017). Additionally, due to the absence of longitudinal data across the majority of the studies, causal conclusions could not be attained regarding the intention to seek help and actual help-seeking (Ali et al., 2020). Therefore, this is a gap within the current literature which could be addressed in future research through investigating the intention-behaviour gap for help-seeking for weight management.

Clinical Implications

With regards to the clinical implications of this scoping review there are several factors to consider relevant to clinical psychology, health psychology, and public health. The review identified specific themes regarding barriers and facilitators to help-seeking which include individual factors, previous experiences of help-seeking, service specific factors and social factors. These factors could be useful to support Clinical Psychologists working in weight management services, bariatric

surgery teams, and public health teams, to undertake service development opportunities to improve weight management provisions (BPS, 2019; PHE, 2017b). This may include conducting service specific evaluations to gather client experiences and perspectives of current weight management services and the barriers and facilitators to seeking help with a focus on health inequity. In addition, the review identified the sources of support which people typically seek help from for their weight. This can support commissioners to identify the most frequently accessed sources of support and improve the promotion of weight management support options.

Furthermore, outcomes from the review could be considered when supporting staff training opportunities for those who come into contact with adults seeking help for their weight. Tod and Lacey (2004) emphasised the importance of the role of service providers and healthcare workers in promoting sensitive, empowering and compassionate weight management support. Clinical Psychologists working in this area have a clear opportunity to promote psychologically informed care amongst other healthcare professionals (Dekker et al., 2023). This could include focusing on increasing compassion and the acknowledgment of the impact of systemic factors and social determinants of health. This overall, could improve the rate of help-seeking and subsequent engagement in weight management support.

Strengths and Limitations

This scoping review followed the JBI best practice guidance (Peters et al., 2015; Peters et al., 2020a) and PRISMA-ScR checklist (Tricco et al., 2018) when conducting the review and reporting the results. Transparency in the processes used is provided through out and the review was assessed against and met the criteria of

the PRISMA-ScR checklist (appendix C). Peters et al. (2022) advise that risk of bias tools to assess the methodological rigour of the included studies are not typically included in a scoping review. Therefore, following best practice guidance (Peters et al., 2020a), a risk of bias tool was not used in this study. Due to this, the methodological rigour of the studies was not assessed, and the quality of the reviewed studies may be variable. Pham et al. (2014) noted that using risk of bias tools within scoping reviews presents several challenges due to the number of studies included and the different study designs. This may result in inconsistent reporting and the utilisation of several different risk of bias tools to appropriately assess different methodological approaches (Pham et al., 2014).

This review used an independent second reviewer to complete a full-text screen of 25% of the potentially relevant studies. The discussion with the second reviewer regarding the selection of studies then lead to the adjustment of the eligibility criteria to further ensure that relevant articles were selected. However, a limitation is that one reviewer completed the initial study screening process (title and abstract screen), and the data extraction process independently. The lack of a second reviewer across all the study screening, selection, and the data extraction phases means that the accuracy of the review process may be hindered due to human error or researcher bias (Stoll et al., 2019). However, every effort was made to reduce the risk of bias through using a comprehensive data extraction sheet and following the iterative process suggested in the best practice guidance (Peters et al., 2020a).

Conclusion

In conclusion, this scoping review has provided an overview of the evidence base regarding help-seeking for weight management. To the author's knowledge, this is the first scoping review to summarise this literature and provide an overview of the reasons why individuals seek help for their weight, the barriers and facilitators to help-seeking, and the methodologies used to research help-seeking. Mapping this literature also highlighted key gaps in the literature and potential areas for future research. These included the exploration of help-seeking for weight gain, facilitators to help-seeking, and utilising specific help-seeking models and frameworks to understand the processes involved in recognising a need for help and making decisions to seek help. This research could provide valuable contributions to increase help-seeking and support individuals to manage their weight.

References

References preceded by an asterisk (*) indicate inclusion in the scoping review

*Adams, M. (2008). "Taking Charge of One's Life": A Model for Weight Management Success. *The Qualitative Report*, *13*(1), 30-52. https://doi.org/10.46743/2160-3715/2008.1604

Agüera, Z., Lozano-Madrid, M., Mallorquí-Bagué, N., Jiménez-Murcia, S., Menchón, J. M., & Fernández-Aranda, F. (2020). A review of binge eating disorder and obesity. *Neuropsychiatrie: Klinik, Diagnostik, Therapie und Rehabilitation: Organ der Gesellschaft Osterreichischer Nervenarzte und Psychiater*, *35*(2), 57-67.

Alegria Drury, C. A., & Louis, M. (2002). Exploring the association between body weight, stigma of obesity, and health care avoidance. *Journal of the American Academy of Nurse Practitioners*, *14*(12), 554-561.

Ali, K., Farrer, L., Fassnacht, D. B., Gulliver, A., Bauer, S., & Griffiths, K. M. (2017). Perceived barriers and facilitators towards help-seeking for eating disorders: A systematic review. *International Journal of Eating Disorders*, *50*(1), 9-21. https://doi.org/10.1002/eat.22598

*Ali, K., Fassnacht, D. B., Farrer, L., Rieger, E., Feldhege, J., Moessner, M., Griffiths, K. M., & Bauer, S. (2020). What prevents young adults from seeking help? Barriers toward help-seeking for eating disorder symptomatology. *The International Journal of Eating Disorders*, *53*(6), 894–906. https://doi.org/10.1002/eat.23266

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter?. *Journal of Health and Social Behavior*, 1-10.

*Annunziato, R. A., & Lowe, M. R. (2007). Taking action to lose weight: Toward an understanding of individual differences. *Eating Behaviors*, *8*(2), 185–194. https://doi.org/10.1016/j.eatbeh.2006.04.004

*Annunziato, R. A., Lee, J. N., & Lowe, M. R. (2007). A comparison of weight-control behaviors in African American and Caucasian women. *Ethnicity & Disease*, *17*(2), 262–267.

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19-32. https://doi.org/10.1080/1364557032000119616

British Psychological Society. (2019). *Psychological perspectives on obesity: Addressing policy, practice and research priorities.* https://doi.org/10.53841/bpsrep.2019.rep130

*Bohrer, B. K., Carroll, I. A., Forbush, K. T., & Chen, P. Y. (2017). Treatment seeking for eating disorders: Results from a nationally representative study. *International Journal of Eating Disorders*, *50*(12), 1341-1349. https://doi.org/10.1002/eat.22785

Bomben, R., Robertson, N., & Allan, S. (2022). Barriers to help-seeking for eating disorders in men: A mixed-methods systematic review. *Psychology of Men & Masculinities, 23*(2), 183–196. https://doi.org/10.1037/men0000382

*Bunt, S. N. W., Mérelle, S. Y. M., Steenhuis, I. H. M., & Kroeze, W. (2017). Predictors of need for help with weight loss among overweight and obese

men and women in the Netherlands: A cross-sectional study. *BMC Health Services Research*, *17*(1), 1-10. https://doi.org/10.1186/s12913-017-2759-1

*Cachelin, F. M., & Striegel-Moore, R. H. (2006). Help seeking and barriers to treatment in a community sample of Mexican American and European American women with eating disorders. *The International Journal of Eating Disorders*, *39*(2), 154–161. https://doi.org/10.1002/eat.20213

*Cachelin, F. M., Rebeck, R., Veisel, C., & Striegel-Moore, R. H. (2001). Barriers to treatment for eating disorders among ethnically diverse women. *The International Journal of Eating Disorders*, *30*(3), 269–278. https://doi.org/10.1002/eat.1084

*Cachelin, F. M., Striegel-Moore, R. H., & Regan, P. C. (2006). Factors Associated with Treatment Seeking in a Community Sample of European American and Mexican American Women with Eating Disorders. *European Eating Disorders Review, 14*(6), 422–429. https://doi.org/10.1002/erv.720

Campbell, R. D., & Long, L. A. (2014). Culture as a social determinant of mental and behavioral health: A look at culturally shaped beliefs and their impact on help-seeking behaviors and service use patterns of Black Americans with depression. *Best Practices in Mental Health*, *10*(2), 48-62.

Cauce, A. M., Domenech-Rodríguez, M., Paradise, M., Cochran, B. N., Shea, J. M., Srebnik, D., & Baydar, N. (2002). Cultural and contextual influences in mental health help seeking: A focus on ethnic minority youth. *Journal of Consulting and Clinical Psychology*, *70*(1), 44. DOI:10.1037/0022-006X.70.1.44

*Ciao, A. C., Latner, J. D., & Durso, L. E. (2012). Treatment seeking and barriers to weight loss treatments of different intensity levels among obese and

overweight individuals. *Eating and Weight Disorders: EWD*, *17*(1), e9–e16.
https://doi.org/10.1007/BF03325323

*Coffino, J. A., Ivezaj, V., Barnes, R. D., White, M. A., Pittman, B. P., & Grilo, C. M.
(2022). Ethnic and racial comparisons of weight-loss treatment utilization
history and outcomes in patients with obesity and binge-eating
disorder. *Eating Behaviors*, *44*, 101594.
https://doi.org/10.1016/j.eatbeh.2021.101594

Cornally, N., & McCarthy, G. (2011). Help-seeking behaviour: A concept
analysis. *International Journal of Nursing Practice*, *17*(3), 280-288.
doi:10.1111/j.1440-172X.2011.01936.x

DeCamp, L. R., Acosta, J., Guerrero Vazquez, M., & Polk, S. (2022). From clinic to
community: Adapting evidence-based weight management for overweight
Latinx children to better address social determinants. *Health Promotion
Practice*, *23*(3), 518-529.

Dekker, J., Sears, S. F., Åsenlöf, P., & Berry, K. (2023). Psychologically informed
health care. *Translational Behavioral Medicine*, *13*(5), 289–296.
https://doi.org/10.1093/tbm/ibac105

*de Heer, H., Kinslow, B., Lane, T., Tuckman, R., & Warren, M. (2019). Only 1 in 10
Patients Told to Lose Weight Seek Help From a Health Professional: A
Nationally Representative Sample. *American Journal of Health Promotion:
AJHP*, *33*(7), 1049–1052. https://doi.org/10.1177/0890117119839904

*Doyle, S., Lloyd, A., Birt, J., Curtis, B., Ali, S., Godbey, K., Sierra-Johnson, J., &
Halford, J. C. (2012). Willingness to pay for obesity pharmacotherapy. *Obesity
(Silver Spring, Md.)*, *20*(10), 2019–2026. https://doi.org/10.1038/oby.2011.387

Eiraldi, R. B., Mazzuca, L. B., Clarke, A. T., & Power, T. J. (2006). Service Utilization among ethnic minority children with ADHD: A model of help-seeking behavior. *Administration and Policy in Mental Health*, *33*(5), 607–622. https://doi.org/10.1007/s10488-006-0063-1

Elliott, M., Gillison, F., & Barnett, J. (2020). Exploring the influences on men's engagement with weight loss services: A qualitative study. *BMC Public Health*, *20*(1), 249. https://doi.org/10.1186/s12889-020-8252-5

*Evans, E. J., Hay, P. J., Mond, J., Paxton, S. J., Quirk, F., Rodgers, B., Jhajj, A. K., & Sawoniewska, M. A. (2011). Barriers to help-seeking in young women with eating disorders: A qualitative exploration in a longitudinal community survey. *Eating Disorders*, *19*(3), 270–285. https://doi.org/10.1080/10640266.2011.566152

Fischer, E. H., & Farina, A. (1995). Attitudes toward seeking professional psychological help: A shortened form and considerations for research. *Journal of College Student Development*, *36*(4), 368–373.

*Fitzsimmons-Craft, E. E., Eichen, D. M., Monterubio, G. E., Firebaugh, M. L., Goel, N. J., Taylor, C. B., & Wilfley, D. E. (2020). Longer-term follow-up of college students screening positive for anorexia nervosa: Psychopathology, help seeking, and barriers to treatment. *Eating Disorders*, *28*(5-6), 549–565. https://doi.org/10.1080/10640266.2019.1610628

*Fontaine, K. R. (1999). Predicting treatment seeking for overweight. *The Journal of Nervous and Mental Disease*, *187*(4), 248-250.

*Hart, L. M., Granillo, M. T., Jorm, A. F., & Paxton, S. J. (2011). Unmet need for treatment in the eating disorders: A systematic review of eating disorder

specific treatment seeking among community cases. *Clinical Psychology*

Review, *31*(5), 727–735. https://doi.org/10.1016/j.cpr.2011.03.004

Hammer, J. H., & Spiker, D. A. (2018). Dimensionality, reliability, and predictive

evidence of validity for three help-seeking intention instruments: ISCI, GHSQ,

and MHSIS. *Journal of Counselling Psychology*, *65*(3), 394.

Hammer, J. H., & Vogel, D. L. (2013). Assessing the utility of the

willingness/prototype model in predicting help-seeking decisions. *Journal of*

Counselling Psychology, *60*(1), 83. 10.1037/a0030449

Harper, D. (2016). Beyond individual therapy: Towards a psychosocial approach to

public mental health. *The Psychologist, 29*(June), 440-444.

*Holt, G., & Hughes, D. (2021). A study using semi-structured interview and Delphi

survey to explore the barriers and enabling factors that influence access and

utilisation of weight management services for people living with morbid

obesity: A patient and professional perspective. *Journal of Human Nutrition*

and Dietetics: The Official Journal of the British Dietetic Association, *34*(1),

215–223. https://doi.org/10.1111/jhn.12832

Hom, M. A., Stanley, I. H., & Joiner Jr, T. E. (2015). Evaluating factors and

interventions that influence help-seeking and mental health service utilization

among suicidal individuals: A review of the literature. *Clinical Psychology*

Review, *40*, 28-39. https://doi.org/10.1016/j.cpr.2015.05.006

Kazi, M. R., Chowdhury, N., Chowdhury, M., & Turin, T. C. (2021). Conducting

comprehensive scoping reviews to systematically capture the landscape of a

subject matter. *Population Medicine*, *3*(December), 1-9.

https://doi.org/10.18332/popmed/143831

*Klingemann, H., Bucher, S., Buri, C., Bolliger-Salzmann, H., & Laederach, K.

(2016). Coping with obesity in Switzerland through self-change and

professional help. *Obesity Medicine*, *4*, 1-11.

https://doi.org/10.1016/j.obmed.2016.09.001

Knoetze, M., Manchaiah, V., Mothemela, B., & Swanepoel, D. W. (2023). Factors

influencing hearing help-seeking and hearing aid uptake in adults: A

systematic review of the past decade. *Trends in Hearing*, *27*,

23312165231157255.

Lederle, M., Tempes, J., & Bitzer, E. M. (2021). Application of Andersen's

behavioural model of health services use: a scoping review with a focus on

qualitative health services research. *BMJ Open*, *11*(5), e045018.

https://doi.org/10.1136/bmjopen-2020-045018

Lemstra, M., Bird, Y., Nwankwo, C., Rogers, M., & Moraros, J. (2016). Weight loss

intervention adherence and factors promoting adherence: A meta-

analysis. *Patient Preference and Adherence*, *10*, 1547–1559.

https://doi.org/10.2147/PPA.S103649

Liang, B., Goodman, L., Tummala-Narra, P., & Weintraub, S. (2005). A theoretical

framework for understanding help-seeking processes among survivors of

intimate partner violence. *American Journal of Community Psychology*, *36*(1-

2), 71-84. 10.1007/s10464-005-6233-6

Luppino, F. S., de Wit, L. M., Bouvy, P. F., Stijnen, T., Cuijpers, P., Penninx, B. W., &

Zitman, F. G. (2010). Overweight, obesity, and depression: A systematic

review and meta-analysis of longitudinal studies. *Archives of General

Psychiatry*, *67*(3), 220–229. https://doi.org/10.1001/archgenpsychiatry.2010.2

Marmot, M., Allen, J., Bell, R., Bloomer, E., & Goldblatt, P. (2012). WHO European

    review of social determinants of health and the health divide. *The*

    Lancet, *380*(9846), 1011-1029. https://doi.org/10.1016/S0140-6736(12)61228-

    8

*Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C. (2007). Health service utilization

    for eating disorders: Findings from a community-based study. *The*

    International Journal of Eating Disorders, *40*(5), 399–408.

    https://doi.org/10.1002/eat.20382

Mond, J., Rodgers, B., Hay, P., & Owen, C. (2011). Mental health impairment in

    underweight women: Do body dissatisfaction and eating-disordered behavior

    play a role?. *BMC Public Health*, *11*, 547. https://doi.org/10.1186/1471-2458-

    11-547

*Munoz, D. J., Lal, M., Chen, E. Y., Mansour, M., Fischer, S., Roehrig, M., Sanchez-

    Johnsen, L., Dymek-Valenitine, M., Alverdy, J., & le Grange, D. (2007). Why

    patients seek bariatric surgery: A qualitative and quantitative analysis of

    patient motivation. *Obesity Surgery*, *17*(11), 1487–1491.

    https://doi.org/10.1007/s11695-008-9427-9

Murray, C. (2005). Young People's Help-Seeking: An alternative model. *Childhood,*

    12(4), 479–494. https://doi.org/10.1177/0907568205058607

*Murray, K., Brichacek, E., & Rieger, E. (2021). Intentions to see a psychologist for

    weight management: A cross-sectional study investigating beliefs about

    psychologists, psychological services and obesity. *Journal of Clinical*

    Psychology, *77*(10), 2288–2305. https://doi.org/10.1002/jclp.23163

Nagai, S. (2015). Predictors of help-seeking behavior: Distinction between help-

seeking intentions and help-seeking behavior. *Japanese Psychological

Research*, *57*(4), 313-322. Doi: 10.1111/jpr.12091

National Institute for Health and Care Excellence. (2014). *Weight management:

Lifestyle services for overweight or obese adults [Public health guideline

PH53].*

National Institute for Health and Care Excellence. (2017). *Eating Disorders:

Recognition and treatment [NG69].*

National Institute for Health and Care Excellence. (2022). *Obesity: Identification,

assessment and management clinical guideline [CG189].*

*Ndebele J. (2014). A survey of men's views on weight management. *Community

practitioner: The journal of the Community Practitioners' & Health Visitors'

Association*, *87*(3), 26–29.

NHS Digital. (2022). *Health Survey for England 2021, part 1: Overweight and obesity

in adults.*

*Ogden J. (2000). The correlates of long-term weight loss: A group comparison study

of obesity. *International Journal of Obesity and Related Metabolic Disorders:

Journal of the International Association for the Study of Obesity*, *24*(8), 1018–

1025. https://doi.org/10.1038/sj.ijo.0801354

O'Loghlen, E., Grant, S., & Galligan, R. (2022). Shame and binge eating pathology:

A systematic review. *Clinical Psychology & Psychotherapy, 29*(1), 147-163.

https://doi.org/10.1002/cpp.2615

Peters, M. D., Godfrey, C. M., Khalil, H., McInerney, P., Parker, D., & Soares, C. B.
(2015). Guidance for conducting systematic scoping reviews. *International
Journal of Evidence-Based Healthcare*, *13*(3), 141–146.
https://doi.org/10.1097/XEB.0000000000000050

Peters, M.D.J., Godfrey, C., McInerney, P., Munn, Z., Tricco, A. C., Khalil, H.
(2020a). Chapter 11: Scoping Reviews (2020a). In: Aromataris E, Munn Z
(Editors). *JBI Manual for Evidence Synthesis*,
JBI. https://doi.org/10.46658/JBIMES-20-12

Peters, M. D. J., Marnie, C., Tricco, A. C., Pollock, D., Munn, Z., Alexander, L.,
McInerney, P., Godfrey, C. M., & Khalil, H. (2020b). Updated methodological
guidance for the conduct of scoping reviews. *JBI Evidence Synthesis, 18*(10),
2119–2126. https://doi.org/10.11124/JBIES-20-00167

Peters, M. D., Godfrey, C., McInerney, P., Khalil, H., Larsen, P., Marnie, C., Pollock,
D., Tricco, A. C., & Munn, Z. (2022). Best practice guidance and reporting
items for the development of scoping review protocols. *JBI Evidence
Synthesis*, *20*(4), 953-968. 10.11124/JBIES-21-00242

Pham, M. T., Rajić, A., Greig, J. D., Sargeant, J. M., Papadopoulos, A., & McEwen,
S. A. (2014). A scoping review of scoping reviews: Advancing the approach
and enhancing the consistency. *Research Synthesis Methods*, *5*(4), 371-385.
https://doi.org/10.1002/jrsm.1123

Prochaska, J. O., & Velicer, W. F. (1997). The transtheoretical model of health
behavior change. *American Journal of Health Promotion: AJHP*, *12*(1), 38–48.
https://doi.org/10.4278/0890-1171-12.1.38

Public Health England. (2017a). *Working together to address obesity in adult mental health secure units. A systematic review of the evidence and a summary of the implications for practice.*

Public Health England. (2017b). *A guide to delivering and commissioning tier 2 adult weight management services.*

Public Health England. (2020). *Healthier weight: Defence insights into tackling a national challenge.*

Public Health England. (2022*). Adult obesity: Applying All Our Health.*

*Reas, D. L., Masheb, R. M., & Grilo, C. M. (2004). Appearance vs. health reasons for seeking treatment among obese patients with binge eating disorder. *Obesity Research*, *12*(5), 758–760. https://doi.org/10.1038/oby.2004.91

Richards, K. L., Woolrych, I., Allen, K. L., & Schmidt, U. (2022). A Delphi study to explore clinician and lived experience perspectives on setting priorities in eating disorder services. *BMC Health Services Research*, *22*(1), 788. https://doi.org/10.1186/s12913-022-08170-4

Rickwood, D. J., & Braithwaite, V. A. (1994). Social-psychological factors affecting help-seeking for emotional problems. *Social Science & Medicine*, *39*(4), 563-572. https://doi.org/10.1016/0277-9536(94)90099-X

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian E-Journal for the Advancement of Mental Health*, *4*(3), 218-251. https://doi.org/10.5172/jamh.4.3.218

Rickwood, D., & Thomas, K. (2012). Conceptual measurement framework for help-seeking for mental health problems. *Psychology Research and Behavior Management*, 5, 173. https://doi.org/10.2147/PRBM.S38707

Rüsch, N., Müller, M., Ajdacic-Gross, V., Rodgers, S., Corrigan, P. W., & Rössler, W. (2014). Shame, perceived knowledge and satisfaction associated with mental health as predictors of attitude patterns towards help-seeking. *Epidemiology and Psychiatric Sciences*, *23*(2), 177-187. https://doi.org/10.1017/S204579601300036X

Saint Arnault, D., & Woo, S. (2018). Testing the influence of cultural determinants on help-seeking theory. *The American Journal of Orthopsychiatry*, *88*(6), 650–660. https://doi.org/10.1037/ort0000353

*Salemonsen, E., Hansen, B. S., Førland, G., & Holm, A. L. (2018). Healthy Life Centre participants' perceptions of living with overweight or obesity and seeking help for a perceived "wrong" lifestyle - A qualitative interview study. *BMC Obesity*, *5*, 42. https://doi.org/10.1186/s40608-018-0218-0

Seagle, H. M., Strain, G. W., Makris, A., Reeves, R. S., & American Dietetic Association (2009). Position of the American Dietetic Association: Weight management. *Journal of the American Dietetic Association*, *109*(2), 330–346. https://doi.org/10.1016/j.jada.2008.11.041

Stewart, A. L., Thrasher, A. D., Goldberg, J., & Shea, J. A. (2012). A framework for understanding modifications to measures for diverse populations. *Journal of Aging and Health*, *24*(6), 992–1017. https://doi.org/10.1177/0898264312440321

*Stokes, A., Collins, J. M., Grant, B. F., Hsiao, C. W., Johnston, S. S., Ammann, E. M., Berry, K. M., Tong, C., & Scamuffa, R. F. (2018). Prevalence and Determinants of Engagement with Obesity Care in the United States. *Obesity (Silver Spring, Md.)*, *26*(5), 814–818. https://doi.org/10.1002/oby.22173

Stoll, C. R. T., Izadi, S., Fowler, S., Green, P., Suls, J., & Colditz, G. A. (2019). The value of a second reviewer for study selection in systematic reviews. *Research Synthesis Methods*, *10*(4), 539–545. https://doi.org/10.1002/jrsm.1369

*Tod, A. M., & Lacey, A. (2004). Overweight and obesity: Helping clients to take action. *British Journal of Community Nursing*, *9*(2), 59–66. https://doi.org/10.12968/bjcn.2004.9.2.12419

*Tol, J., Swinkels, I. C., De Bakker, D. H., Veenhof, C., & Seidell, J. C. (2014). Overweight and obese adults have low intentions of seeking weight-related care: A cross-sectional survey. *BMC Public Health*, *14*, 582. https://doi.org/10.1186/1471-2458-14-582

Tomiyama, A. J., Carr, D., Granberg, E. M., Major, B., Robinson, E., Sutin, A. R., & Brewis, A. (2018). How and why weight stigma drives the obesity 'epidemic' and harms health. *BMC Medicine*, *16*(1), 1-6. https://doi.org/10.1186/s12916-018-1116-5

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M., Garritty, C., … Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR):

Checklist and explanation. *Annals of Internal Medicine, 169*(7), 467-473.
https://doi.org/10.7326/M18-0850

Truby, H., Baxter, K., Elliott, S., Warren, J., Davies, P., & Batch, J. (2011).
Adolescents seeking weight management: Who is putting their hand up and
what are they looking for?. *Journal of Paediatrics and Child Health*, *47*(1-2), 2-
4. doi:10.1111/j.1440-1754.2010.01740.x

*Visram, S., Crosland, A., & Cording, H. (2009). Triggers for weight gain and loss
among participants in a primary care-based intervention. *British Journal of
Community Nursing*, *14*(11), 495–501.
https://doi.org/10.12968/bjcn.2009.14.11.45008

Virgo, H. (2019). *Eating Disorders are not just about weight #dumpthescales.*
National Centre for Mental Health. https://www.ncmh.info/2019/02/25/dump-
the-scales/

Wilson, C. J., Deane, F. P., Ciarrochi, J. V. & Rickwood, D. (2005). Measuring help
seeking intentions: Properties of the General Help Seeking Questionnaire.
Canadian Journal of Counselling, 39(1), 15-28.

*Wolfe, B. L., & Smith, J. E. (2002). Different strokes for different folks: Why
overweight men do not seek weight loss treatment. *Eating Disorders*, *10*(2),
115–124. https://doi.org/10.1080/10640260290081687

*Yoong, S. L., Carey, M. L., Sanson-Fisher, R. W., & D'Este, C. A. (2013). A cross-
sectional study assessing Australian general practice patients' intention,
reasons and preferences for assistance with losing weight. *BMC Family
Practice*, *14*, 187. https://doi.org/10.1186/1471-2296-14-187

Appendix A

Search Strategy

Database	Date	Concept	Context	Results
PsycINFO	13/12/2022	Help seeking behaviour OR health care seeking behaviour OR healthcare utilisation	Weight loss OR obesity OR weight gain OR weight control OR body weight OR BMI	328
PsycINFO	13/12/2022	Help seeking behaviour OR health care seeking behaviour OR healthcare utilisation OR help seeking	Weight loss OR obesity OR weight gain OR weight control OR body weight OR BMI OR weight management	354
MedLINE	13/12/2022	Help seeking behaviour	Obesity OR overweight OR thinness OR underweight OR weight loss OR weight management	7
MedLINE	14/12/2022	"help seek"	"Weight manage*"	15
MedLINE	14/12/2022	Seek* help	Weight manage*	269
MedLINE	14/12/2022	Help seek*	Weight los*	31
Scopus	16/12/2022	"help seek*"	"weight manage"	45
Scopus	16/12/2022	"seek* help"	"weight manage"	17

Scopus	16/12/2022	"help seek*"	"weight los*" OR "weight gain"	251
Scopus	16/12/2022	"help seeking behaviour"	Obes*	437
Scopus	16/12/2022	Help seeking	Obes* AND barrier	58

Appendix B

Data Extraction Sheet

1. Authors

2. Year of publication

3. Country of origin

4. Methodology type

5. Research design

6. Methodological approach

7. Data collection method

8. Study objective

9. Purpose of weight management (weight loss, gain or eating disorder)

10. Eating disorder diagnoses

11. Study context

12. Sampling method

13. Sample size

14. Participant age

15. Participant sex

16. Participant BMI

17. Participant ethnicity

18. Study findings

19. Help-seeking definition

20. Help-seeking measures

21. Help-seeking behaviour/process

22. Barriers

23. Facilitators

Appendix C

PRISMA-ScR Checklist

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	10
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	11
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	11
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	13
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	12
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Appendix A page 56
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	14
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	14. Charting form template found Appendix B

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	14
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	14
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	15 – PRISMA flowchart
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	18-26 table
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	N/A
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	18-26
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	15-36
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	36
Limitations	20	Discuss the limitations of the scoping review process.	41
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	42
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	N/A

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document). *From:* Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

Section Two: Empirical Study

Predicting Uptake to a Weight Management Programme

Abstract

Objectives

Reducing and preventing obesity is a dominant public health priority. It is widely acknowledged that those who engage with and adhere to support are more likely to have better health outcomes and weight loss. Research is required to understand uptake and attrition from weight loss interventions. The current study aimed to investigate if the Capability, Opportunity, Motivation – Behaviour (COM-B) model could predict uptake to a tier two weight management programme (WMP).

Method and Design

The study used an online survey which was completed with 121 participants from a tier two WMP in the East Midlands. The questionnaire was implemented prior to the first session of the intervention. The questionnaire included the COM-B self-evaluation questionnaire and gathering participant characteristics such as age, gender, ethnicity, weight, height, and neighbourhood deprivation. Participants were categorised as starters or non-starters depending on whether they attended the first session. Binary logistic regression was used to investigate if the independent variables were significant predictors of uptake.

Results

The results found that the capability variable and index of multiple deprivation were significant predictors of uptake, explaining 16.1% of the variance in uptake. Participants from less deprived neighbourhoods and with higher perceived physical and psychological capability were more likely to attend the first session.

Conclusion

The COM-B model partially predicts uptake to a tier two WMP. Level of relative deprivation is also an important factor to consider, however, more research is required to understand how deprivation is related to uptake and attrition.

Practitioner Points

- Despite the increase in funding and development of WMPs, attrition and disengagement are common and can impact negatively upon health outcomes.

- The COM-B model enables researchers and practitioners from clinical settings to consider individual and environmental factors which contribute to obesity and (dis)engagement from weight loss support.

- Uptake was more likely to occur for people living with lower levels of relative deprivation. Further research is needed to understand how deprivation affects engagement in healthcare services to reduce the risk of attrition and disengagement.

- There is an opportunity for psychologists working within public health settings to increase physical and psychological capability to improve attendance for WMPs through upstream interventions.

Keywords: obesity, Capability, Opportunity, Motivation-Behaviour, uptake, attrition, weight management programme

Predicting Uptake to a Weight Management Programme

Overweight and obesity are defined as the excessive accumulation of body fat posing a risk to health (World Health Organisation [WHO], 2021). Obesity is considered a global public health concern and in England, it is estimated that 64% of adults are currently overweight or obese. The National Institute of Health and Care Excellence (NICE; 2014a) highlighted that the main method of measuring overweight and obesity is through body mass index (BMI), which is calculated by dividing weight in kilograms by height in metres squared (kg/m^2). BMI is categorised into underweight, healthy weight, overweight, and obese.

Obesity is associated with an increased risk of comorbid physical and mental health conditions (Department of Health, 2011). This includes an increased risk of cardiovascular disorders, diabetes type II, some types of cancer, and osteoarthritis (WHO, 2021). Research also highlights that individuals living with obesity have an increased risk of mental health difficulties, such as depression and anxiety (Sarwer & Polonsky, 2016). These physical and mental health conditions can be barriers to behaviour change and weight loss, whilst contributing to poorer quality of life and often increasing health service use (NICE, 2022). Thus, prevention and reduction of obesity are highly prioritised public health initiatives (Flint & Oliver, 2019).

Public Health England (PHE; 2022) highlighted that the prevalence of obesity is higher for people if they live in more deprived areas, identify as being from a minority ethnic group, have a disability, or if they are older. There is extensive research linking socioeconomic status to the development of obesity (Adams, 2020; Ball & Crawford, 2005). In low income countries, obesity is more prevalent for more affluent groups, whereas in developed countries, an inverse relationship is observed

where obesity is more prevalent for less-affluent groups (Adams, 2020). Groups who are the most socioeconomically disadvantaged are more likely to experience health inequalities, which ultimately lead to poorer health outcomes (Ball & Crawford, 2005). Several socioeconomic factors impact upon the risk of developing obesity including income, housing, education, accessibility and availability of healthy food, or the availability of services for local communities (Bryant et al., 2015). These economic and social conditions influence individual and population level health; they are known as the social determinants of health (Bryant et al., 2015). Bryant et al. (2015) highlighted that addressing the social determinants of health is a complex task which would benefit from a systemic approach involving individuals, communities, and the government.

The Role of Clinical Psychology in Public Health

Public health settings typically focus on health prevention and health promotion activities. This has included "upstream" interventions which target the social factors (low-income, housing, education) contributing to health and preventing illness (Williams & Fullagar, 2019). As previously mentioned, these factors have a detrimental impact upon health and health outcomes.

More recently, there is recognition and a shift to include clinical psychology within public health settings. Harper (2016) argued that psychologists could infuse ideas from community psychology and public health to develop proactive and preventative interventions, targeting communities, populations and the systems around them to address systemic and socioeconomic contributors to distress and poor health. Furthermore, Marwood et al. (2023) also identified that it would be beneficial for psychologists to work into tier two weight management programmes

(WMP) to support the needs of people living with obesity and mental health difficulties.

Interventions for Obesity

Recommended interventions for the prevention and reduction of obesity are offered within a tiered structure. This includes tier one: universal public health interventions; tier two: multi-component life-style interventions; tier three: specialist weight management services; and tier four: bariatric surgery (NICE, 2014; Ells et al., 2018). In recognition of the impact of mental health on behaviour change and weight loss, psychological interventions are also offered to individuals living with overweight and obesity (Shaw et al., 2005). Systematic reviews highlight that some psychological interventions focus on improving psychological well-being without focusing on concurrent weight loss (MacDonald & Cassin, 2017). Other interventions utilise Cognitive Behavioural Therapy in conjunction with lifestyle interventions (Shaw et al., 2005).

Tier two WMP are commissioned within communities by local authorities (NICE, 2014). WMPs typically use a multicomponent approach, offering support that addresses diet, physical activity, and behaviour change techniques (PHE, 2017). These services are commissioned to provide a minimum intervention of 12 weeks and often have a follow up phase to support long term maintenance of weight loss (PHE, 2017). A systematic review of tier two WMPs highlighted several critical features for successful interventions (Sutcliffe et al., 2016). These include supportive client-service relationships and sustained engagement in weight management activities (Sutcliffe et al., 2016). However, tier two WMPs frequently report poor

outcomes and reduced effectiveness due to poor attendance and adherence, and insufficient reporting of data (Moroshko et al., 2011; Ells et al., 2018).

Attrition from WMPs

Attrition refers to the reduction in clients utilising and completing an intervention due to disengagement (Nobles et al., 2018). Disengagement from WMPs can occur at different timepoints across an intervention, such as before an intervention starts (at the point of uptake), part-way through, or before the intervention ends. Miller and Brennan (2015) noted that engagement-related terms, such as retention, disengagement, uptake, attrition, drop-out, completion, and adherence, are often used interchangeably within the literature despite being separate issues. Furthermore, the use of inconsistent operational definitions can affect conclusions being made regarding service effectiveness (Miller & Brennan, 2015; Nobles et al., 2015). Within the current study, the term uptake is used to describe client's attendance at the first intervention session of a WMP.

The Department of Health (2013) suggest that 60% of clients are likely to complete 12-week WMP. However, this highlights that around 40% of clients disengage and do not complete programmes (Department of Health, 2013). Whilst attrition rates from WMPs are not always reported within the research, the literature suggests that attrition rates can vary from 10%-80% depending on the intervention provision and the programme setting (Moroshko et al., 2011). Similarly, in a literature review of uptake and retention to a National Health Service (NHS) Diabetes prevention WMP, uptake rates ranged from 1% to 99% (PHE, 2018). Moroshko et al. (2011) highlighted that attendance and adherence are positively correlated with better weight loss outcomes. This emphasises the importance of understanding

factors influencing attrition to better support successful weight loss outcomes and improve programme effectiveness (Thomson et al., 2020).

Two systematic reviews aimed to identify factors impacting and predicting adherence, attrition, and success in WMPs (Moroshko et al., 2011; Burgess et al., 2017). However, no consistent and reliable predictors of attrition were found (Moroshko et al., 2011). Previous research proposes factors associated with attrition include lack of time, social pressure, health limitations, previous diet attempts, mental health, and motivation (Burgess et al., 2017; Teixeira et al., 2004). Burgess et al. (2017) suggest that individuals may lose motivation, confidence in their ability to lose weight, and interest in the programme, when they do not experience early weight loss. Moreover, Burgess et al. (2017) found that socioeconomic constraints acted as barriers to lifestyle changes for weight loss. These included poor access to affordable exercise facilities, or limited space within homes to exercise, financial constraints, and a lack of knowledge and education around healthy eating, portion sizes, and inactivity.

Participant characteristics such as gender, ethnicity, age, employment status and BMI have been associated with pre-bariatric surgery attrition in New Zealand (Taylor et al., 2018). The authors considered that these findings may suggest that there is a link between attrition, relative deprivation and socioeconomic status (Taylor et al., 2018). This finding reflects the consensus in the literature of the relationship between obesity and socioeconomic status (Coupe et al., 2022). Findings also suggest that individuals with lower socioeconomic status are less likely to engage in health promoting behaviours including weight management strategies (Stringhini et al., 2010).

In their systematic review, Moroshko et al. (2011) recommended that future research could explore the utilisation of psychological and behavioural theory to identify predictors of attrition. They suggested researching theoretically grounded concepts such as motivation, self-efficacy, and eating behaviours (Moroshko et al., 2011). The researchers also highlighted the importance of exploring psychosocial variables, the patient's suitability for interventions, and practical difficulties which may also impact upon attrition rates (Moroshko et al. 2011). With these recommendations in mind, models of behaviour change may offer frameworks to conceptualise factors which may impact upon or predict attrition.

Behaviour Change Theories

Behaviour change theories have been developed to understand, explain, change and predict specific health behaviours (Teixeira & Marques, 2017). This includes research exploring why people engage in behaviours which pose a risk to health and investigating the mechanisms of change (Teixeira & Marques, 2017). In 2014, Michie et al. highlighted that there were 83 formal theories of behaviour and behaviour change and around 1700 theoretical constructs used to understand behaviour change. Different theories conceptualise behaviour change constructs in different ways; however, they typically consider individual level factors and/or environmental level factors. Examples of individual level factors which influence health behaviour include motivation, emotions, biological factors, and self-efficacy. Examples of environmental level factors include social, cultural, and physical factors such as accessibility and availability of services and social support.

An example of a behaviour change theory is the Capability, Opportunity, Motivation- Behaviour (COM-B) model devised by Michie et al. (2011). The COM-B

has been cited by NICE guidance (2014b) as a key theoretical framework for understanding and aiding behaviour change. This model proposes that for a specific health behaviour to occur there is an interaction of three overarching components: capability, opportunity, and motivation (Michie et al., 2011). Michie et al. (2011) suggested that these components are each directly associated with the behaviour. However, motivation may also be mediated by the capability and opportunity components and behaviour can also influence each of the components. Capability refers to the physical and psychological capacity, including knowledge and skills, to engage in the specific behaviour. Opportunity refers to the physical and social factors that either prompt the behaviour or make it possible. Finally, motivation refers to the conscious and unconscious cognitive functions which stimulate and direct behaviour. Therefore, the COM-B model considers an individual's perception of the individual and environmental level factors which contribute to a specific behaviour. Michie et al. (2011) highlighted that behaviour is complex and influenced by many factors, however the authors argue that behaviour change can be achieved through targeting at least one of the COM-B components.

The use of the COM-B model in research and intervention development is extensive (Keyworth et al., 2020). For example, the COM-B model has been used to inform a weight loss intervention for low socioeconomic status communities (Coupe et al., 2021). This intervention was developed through identifying specific areas of need for clients and staff and applying the COM-B components to understand these areas, resulting in an extension to the intervention. Similarly, the COM-B model has been used successfully to identify facilitators and barriers to eating behaviours and physical activity amongst young adults (Willmott et al., 2021). Willmott et al. (2021) reported that the COM-B model explained 31% variance in physical activity

behaviour and 23% variance in eating behaviours. This study concluded that the COM-B model may address limitations of other behaviour change theories, which focus on either individual level factors or environmental level factors (Willmott et al., 2021).

However, despite the wide application of the COM-B model underpinning behaviour change interventions, few studies have investigated the predictive validity of the COM-B model (Armitage & Munro, 2023). A small number of studies report that the COM-B model successfully predicted a range of health-related behaviours. Keyworth et al. (2020) reported that the COM-B model explained 47% of the variance amongst healthcare professionals delivering behaviour change interventions. Additionally, the predictive validity of the COM-B model was supported in relation to adhering to COVID-19 guidance (Armitage et al., 2021; Armitage et al., 2023) and attending hearing screens (Armitage & Munro, 2023). Armitage & Munro (2023) noted the importance of investigating the predictive validity of the COM-B model across different health behaviours. However, they highlighted that the current research presents limitations due to the use of cross-sectional designs.

Finally, several studies have aimed to understand the factors associated with or predict attrition from weight loss programmes (Michelini et al., 2014; Ponzo et al., 2020; Taylor et al., 2018). However, these studies have not appeared to utilise theoretical frameworks of behaviour change to conceptualise and explain this behaviour. The COM-B model could be particularly helpful in understanding and predicting uptake and attrition from WMPs due to the model recognising individual and environmental factors. This is particularly useful as the literature has highlighted that many factors may contribute to attrition or disengagement in weight

management (Ponzo et al., 2020) and recognise the complexity of obesity and weight-related behaviours (Willmott et al., 2021).

The Current Study

The current study has been designed and conducted in partnership with an East Midlands public health team, who offer a tier two WMP for the local community. The service provides a multi-component, 12-week tier two WMP which is then followed by a nine-month maintenance period, as recommended in the current NICE guidance (2014a). Referral and uptake to the WMP occurred through a rolling process, rather than offering a static start date. Therefore, clients received an individualised timetable of sessions and contact with health advisors. Sessions and contacts were facilitated in groups or individually, online, in person, or over the telephone. During the maintenance period, clients were able to access support from health advisors.

The literature shows a wide range of reported uptake (1%-99%) and attrition (10%-80%) rates to WMPs (Moroshko et al., 2011; PHE, 2018). As non-attendance is associated with poorer health outcomes and lower weight loss (Moroshko et al., 2011), it is important to add to the currently limited literature exploring uptake to WMP.

Clinical Implications

Investigating uptake to WMPs is an important and novel study area which has several implications for clinical psychology and public health psychology. This research could support clinical and public health psychologists who are working with systems and upstream in primary care services to use theoretical frameworks, like the COM-B model, to identify factors which can impact uptake and attrition from

WMPs. Identifying factors which increase uptake could support the development of community based provisions, inform national policies, and improve weight management support and obesity interventions.

Aims and Hypotheses

The primary aim of this study is to investigate if the COM-B model can predict uptake to a tier two WMP. Specifically, the capability, opportunity and motivation to start the WMP will be investigated to see if these variables predict uptake. Additionally, the study aims to investigate if participant characteristics and demographics (age, gender, BMI, ethnicity and index of multiple deprivation) predict uptake.

Hypothesis 1: Higher perceived capability, opportunity and motivation will be more likely to predict uptake to the WMP.

Hypothesis 2: Based on existing research the current study hypothesises that participant characteristics and demographics, specifically those living in neighbourhoods with lower relative deprivation, will be more likely to predict greater uptake.

Method

Design

This study used a survey design to collect quantitative data from participants prior to the start of the WMP. The study involved an online questionnaire using Qualtrics survey platform to investigate the impact of the COM-B variables and specific participant characteristics on uptake to a tier two WMP. The dependent variable was dichotomous; did the participant start the intervention or not start the

intervention. The independent variables were the three components of the COM-B model: capability, opportunity, and motivation. Additional independent variables included age, gender, ethnicity, BMI, and the index of multiple deprivation (IMD) decile. The study was pre-registered with the University of Sheffield (reference number 175516).

Participants and Recruitment Procedure

Participants in the study were members of a community who referred themselves to the WMP run by the East Midlands Council public health team. Enrolment and starting the intervention occurred on a rolling basis, where clients had an individualised plan of contact and sessions with the public health team. Therefore, recruitment to this study mirrored this rolling process. Participants were recruited to the study between July 2022 and January 2023 through purposive sampling. This was achieved through a research invite sent via email. All individuals referred to the WMP received an induction pack, which included several questionnaires to be completed prior to starting the intervention. The research invite was embedded within this induction pack email as a hyperlink to the Qualtrics questionnaire (see Appendix C).

The participants were adults (aged 18 and above) who had enrolled onto the WMP. For the programme, the public health team used the following inclusion criteria: (1) adults, aged 18 and above; (2) BMI score ≥25 or ≥23 for clients from minority ethnic groups; and (3) clients must have a postcode of the local area or be registered with a General Practitioner in the local area. The research questionnaire was completed by participants prior to starting the WMP.

Measures

Participant Characteristics and Demographics

The online Qualtrics questionnaire included several questions relating to participant characteristics and demographic information. This included participant initials, date of birth, gender, ethnicity, height, weight and postcode. Participant initials and postcode were gathered to enable a staff member from the public team to identify if the participants had started the intervention or not.

BMI

Participants provided their self-reported height and weight on the questionnaire. These were then used to calculate their BMI score by dividing weight in kilograms by height in metres squared (kg/m^2).

Index of Multiple Deprivation

Participant's postcodes were used to obtain the index of multiple deprivation scores from the English indices of deprivation (Ministry of Housing, Communities & Local Government, 2019). The index of multiple deprivation describes the UK government official measure of relative deprivation which combines data from seven domains and ranks neighbourhoods from most to least deprived depending on the measures of these domains (Ministry of Housing, Communities & Local Government, 2019). These ranks are converted into deciles, by splitting the ranked neighbourhoods in England (n=32448) into ten equal groups. This gives an area a score from one to 10, where a score of one represents an area in the bottom 10% and therefore the most deprived areas.

COM-B Self-Evaluation Questionnaire

The Qualtrics questionnaire also included the Capability, Opportunity, Motivation – Behaviour (COM-B) self-evaluation questionnaire devised by Keyworth et al. (2020). This questionnaire is a brief, six-item measure which is used to assess capability, opportunity, and motivation domains in relation to the COM-B behaviour change model (Michie et al., 2011). The COM-B model posits that there are three components (capability, opportunity, and motivation) which need to be present in order for a behaviour to occur (Michie et al., 2011). This model offers a rationale for why specific health-related behaviours are not engaged in, such as non-engagement in WMPs.

The COM-B self-evaluation questionnaire uses a 11-point Likert scale ranging from 0 (strongly disagree) to 10 (strongly agree). Keyworth et al. (2020) provide evidence of the reliability, validity, and acceptability of the measure when it was used by individuals with low socioeconomic status and healthcare professionals. Keyworth et al. (2020) noted that test-retest reliability of the measure was fair to good for four of the items and excellent for two of the items, demonstrated by intra-class correlation coefficient (ICC). The authors highlighted strong evidence for discriminant validity amongst the six items as shown by medium to large Pearson's r effect sizes. A factor analysis demonstrated a good fit for a three-factor model which explained 74% of the total variance. This demonstrated that the physical capability and psychological capability items loaded onto the capability factor, physical opportunity and social opportunity items loaded onto the opportunity factor, and the automatic motivation and reflective motivation items loaded onto the motivation factor (Keyworth et al., 2020). Additionally, Keyworth et al. (2020) presented evidence supporting the predictive validity of the COM-B questionnaire for the delivery of

behaviour change interventions using multiple regression analyses. A copy of the questionnaire is available in Appendix H.

Within this study, Cronbach's alpha was reported to establish the internal consistency of the COM-B measure. The results of Cronbach's alpha were $\alpha=0.83$. This suggests that the questionnaire has good internal consistency with this sample (Taber, 2016).

The COM-B self-evaluation questionnaire is designed to be tailored to different populations and research questions. Therefore, the questionnaire was modified to ensure that it was relevant to the specific study and sample. The questionnaire was modified with collaborators from the public health team and consideration was given to health literacy guidance. This is particularly important as in a systematic review, low health literacy was associated with overweight and obesity (Michou et al., 2018). The questionnaire was run through a readability calculator which highlighted a Flesch reading ease score of 70.96 (see Appendix G). Flesch reading ease is scored between zero and 100, where 100 is classified as very easy to read and a score of zero indicates it is very difficult to read. The questionnaire score of 70.96 is classified as "fairly easy" to read for an adult (Flesch, 1948). This score converts to an average reading level grade seven (12-13 year old children) and is within the recommended level for health materials (Hutchinson et al., 2016).

Procedure

As previously mentioned, participants received the invitation to take part in the study through the induction pack email sent out to every person referred to the WMP. The online questionnaire was accessed through a hyperlink to the Qualtrics

survey platform. Prior to completing the questionnaire, participants received an information sheet (Appendix D) which was embedded within the Qualtrics questionnaire. A click through process was used to enable participants to provide consent before the questionnaire could commence (Appendix E). The questionnaire took approximately 10 minutes to complete. Then, this was the end of the research involvement for the participants. Following completing the questionnaire, participants received a debrief form (Appendix F).

A password protected spreadsheet containing participant initials and postcodes were sent via encrypted email to a designated team member within the public health team. The public health team then updated the spreadsheet stating whether a participant had attended the first session of the WMP or not.

Ethical Considerations

Ethical approval was granted from the University of Sheffield Department of Psychology Research Ethics Committee (reference number 044702) prior to the commencement of the research (Appendix A). Permission to conduct research within the Council was also granted following their internal application process (see Appendix B).

Ethics guidelines for internet-mediated research was consulted for the design and implementation of the research (British Psychological Society [BPS], 2021a). This included gathering minimal identifiable information for the purpose of matching the participant data with their starter/non-starter status with the public health team. Participants were also informed that they could withdraw from the study at any time by closing the browser and their data would not be stored.

Statistical Analysis

Data analyses were conducted using Statistical Package for the Social

Sciences (SPSS; version 29) statistical software suite. All data was screened for

missing values and outliers. A missing value analysis was conducted to calculate the

number and percentage of missing values across the dataset. Where missing values

were found, the data was examined to consider if any patterns occurred.

Descriptive statistics were completed for participant characteristic variables

and outcome variables including reported means and standard deviations.

Participant characteristics and scores on the COM-B questionnaire were compared

between starters and non-starters using Chi-Square tests for associations (χ^2) for

categorical data or Independent Sample t-tests (t) for continuous data. Cronbach's

alpha was calculated to establish the internal consistency of the COM-B measure.

To test for multicollinearity of variables, Pearson Correlation Coefficients (r)

were calculated for the continuous variables. Independent variables with $r \geq .8$ were

excluded from the regression model as this indicates a high correlation between

variables and could impact the interpretation of the findings (Shrestha, 2020). The

magnitude of the Pearson Correlation Coefficient has been converted into qualitative

descriptors (Schober et al., 2018). These descriptors included negligible correlation

(0.00-0.10), weak correlation (0.10-0.39), moderate correlation (0.40-0.69), strong

correlation (0.70-0.89) and very strong correlation (0.90-1.00).

To test hypothesis one and two, a binary logistic regression analysis was

conducted. This was used as the outcome variable for the regression was

dichotomous. The "backward (likelihood ratio)" stepwise method was used where all

variables were added to the model simultaneously then the least significant variable

was removed at each step until only significant predictors remained. This method

was chosen as there is limited research in this area which could indicate which variables may be significant predictors of uptake.

The outcome variable in the model was "uptake status" which identified participants as "starter" or "non-starter". In the model, the expected outcome was "starter" and so was coded as 1, whilst "non-starter" was code as 0. The independent variables added into the model were capability, opportunity, motivation, age, gender, ethnicity, BMI, and IMD decile. Continuous independent variables were capability, opportunity, motivation, age, BMI, and IMD decile. Categorical independent variables were gender (male/female) and ethnicity (white British/other).

Sample Size Calculation

A priori power analysis calculation was completed for this study. This was completed using Cohen's table (Cohen, 1992) to determine the sample size required to detect significant effects within a multiple regression with a maximum of eight predictor variables. An effect size (f^2) was calculated using an R^2 value from a similar study where a behaviour change model was used to predict weight loss amongst adolescents (Park, 2011). Park (2011) found an overall R^2 value of 0.155 for the independent variables; this was calculated to $f^2 = 0.183$ using the following equation: $f^2 = R^2 / 1 - R^2$; and rounded to a medium effect size of 0.15. A sample of 107 participants was deemed sufficient in order to detect a medium effect size, with power of 0.80 and α=.05.

Missing Value Analysis

A missing value analysis reported that there were five missing data points across the dataset (4.2%). These missing values appeared to occur at random, rather than due to a systematic error. The missing values included a BMI score for

one participant, ethnicity of two participants, and two missing responses to the physical opportunity item on the COM-B measure. Imputation of these values was not completed as the missing data accounted for a very small number of data points. The additional data for each participant was preserved and the specific missing value was removed from statistical analyses through listwise deletion.

Results

Descriptive Statistics

Overall, 1312 clients referred to the WMP were invited to participate in the research. Of these clients, 159 accessed the questionnaire, of these, 121 participants completed the questionnaire, with 38 choosing to opt out of the research by exiting the questionnaire without completing. Therefore, the results of this study are based on data from 121 participants.

Participant ages ranged from 20-76 with a mean age of 52.7 years old. There were 97 participants which identified as female (80.1%), and 24 participants identified as male (19.9%). The majority of participants reported their ethnicity as white British (96.63%). Four participants were classified as 'other' for the purpose of the analysis, however ethnicities in the other category included white African (n=1), British Pakistani (n=1), white European (n=1) and multiracial (n=1). Two participants did not specify their ethnicity.

Participants provided their self-reported body weight on the questionnaire. Overall, participant's body weight ranged from 60.3kg-199.6kg with a mean body weight of 104.05kg. Participant's BMI was calculated by the researcher using the participant's reported height and weight. BMI scores ranged from 24.74 (upper end

of a normal BMI) to 58.55 (obese) with a mean BMI of 37.53. IMD deciles ranged from 1-10, with a mean IMD decile of 5.58.

Comparisons Between Starters and Non-Starters - Participant Characteristics

Comparisons were calculated to investigate if starters and non-starter participants were significantly different in terms of participant variables and scores on the COM-B variables. Chi-Square tests of associations reported no significant differences between starters and non-starters in terms of gender ($\chi^2(1)=0.252$, $p=0.616$) and ethnicity ($\chi^2(1)=1.33$, $p=0.248$). Independent samples t-test for age ($t(119)=1.022$, $p=0.309$) and BMI ($t(118)=0.824$, $p=0.412$), were non-significant, suggesting that there were no significant differences in age or BMI across the two groups. However, independent samples t-test reported a significant difference for IMD decile, $t(119)=2.387$, $p<0.05$, which shows that IMD decile was lower for the non-starters than the starters, which suggests that the non-starters tend to live in more deprived areas.

Comparisons Between Starters and Non-Starters - COM-B Variables

Independent samples t-tests also reported significant differences between starters and non-starters in scores on the capability ($t(117)=2.613$, $p=0.01$) and opportunity ($t(35.3)=2.507$, $p=0.017$) variables. For both variables, scores were significantly higher for the starters compared with the non-starters. This suggests that the participants who did not start the intervention had significantly lower perceived capability and opportunity to attend the WMP. However, a non-significant independent samples t-test was found for the motivation variable ($t(119)=1.612$, $p=0.110$) which suggests that there was no significant difference in the participants perceived motivation to attend the WMP.

Descriptive statistics and comparisons between starters and non-starters of participant characteristics are displayed in Table 1. This includes means and standard deviations or number and percentage.

Table 1

Sample Characteristics by Group Including Tests of Differences

	Starters		Non-starters		Test of difference
	N	**%**	**N**	**%**	
Gender					
Female	72	59.5	25	20.7	$\chi^2(1)=0.252$,
Male	19	15.7	5	4.1	$p=0.616$
Ethnicity					
White	86	71.07	29	23.9	$\chi^2(1)=1.33$,
Other	4	3.30	0	0	$p=0.248$
Not specified	1	0.82	1	0.82	
	Mean	**SD**	**Mean**	**SD**	
Age	53.29	12.85	50.50	13.42	$t(119)=1.022$, $p=0.309$
BMI	37.86	7.90	36.55	6.25	$t(118)=0.824$, $p=0.412$
IMD decile	5.90	2.45	4.63	2.735	$t(119)=2.387$, $p=0.019^*$
Capability	18.13	2.23	16.23	3.94	$t(35.3)=2.507$, $p=0.017^*$
Opportunity	17.50	2.55	16.06	2.76	$t(117)=2.613$, $p=0.01^{**}$
Motivation	16.42	3.03	15.36	3.27	$t(119)=1.612$, $p=0.110$

Note. *significant at $p<0.05$ threshold; **significant at $p<0.01$ threshold; ***significant at $p<0.001$; SD: standard deviation; N: number; BMI: body mass index; IMD: index of multiple deprivation

Test of Multicollinearity of Continuous Independent Variables

To test for multicollinearity of continuous independent variables, Pearson Correlation Coefficients (r) were calculated. Multicollinearity of variables was not assumed as $r<.8$ was shown for all variables; the results are presented in Table 2. The table shows a weak positive association between IMD and age which suggests that as age increases the level of relative deprivation decreases. There is a weak negative association between age and BMI which suggests that as age increases the participants tend to have a lower BMI. The table also shows a moderate positive association between capability and opportunity which shows that as capability scores increase, opportunity scores also increase. A moderate positive association between capability and motivation was found which shows that as capability scores increase, motivation also increases. A moderate positive association was found between opportunity and motivation which shows that as opportunity increases, motivation also increases. Finally, there is a weak positive association between IMD decile and capability, which suggests that as capability scores increases, IMD deciles are higher (less deprived areas).

Table 2

Pearson Correlation Coefficient (r) of Associations Between Continuous Variables

	Age	BMI	IMD decile	Capability	Opportunity	Motivation
Age(r)	-					
Sig (2-tailed)	-					
BMI(r)	-.198					
Sig (2-tailed)	.030*					

IMD decile(*r*)	.382	-.141				
Sig (2-tailed)	<.001***	.124				
Capability(*r*)	.106	.053	.198			
Sig (2-tailed)	.247	.568	.029*			
Opportunity(*r*)	.119	.051	.099	.555		
Sig (2-tailed)	.198	.585	.283	<.001***		
Motivation(*r*)	.119	.084	.087	.495	.665	-
Sig (2-tailed)	.194	.365	.342	<.001***	<.001***	-

Note. *significant at $p<0.05$ threshold; **significant at $p<0.01$ threshold; ***significant at $p<0.001$; BMI: body mass index; IMD: index of multiple deprivation

Tests of the Main Hypotheses

To test hypothesis one and two, a binary logistic regression was conducted. The results of the binary logistic regression using the backward stepwise (likelihood ratio) method are presented in Table 3 and Table 4. The backward method started with step one which included all independent variables, then the least significant variables were removed one at a time over six steps. The first step of the model was significant (χ^2=19.262, df=8, p=0.014), it explained 22.7% of the variance in uptake as shown by Nagelkerke R^2 and classified 81.0% of cases correctly. The final step of the model (step seven) was significant (χ^2=13.364, df=2, p<.001), it explained 16.1% of the variance in uptake as shown by Nagelkerke R^2 and classified 78.4% of cases correctly.

Table 3

Backward Stepwise (Likelihood Ratio) Binary Logistic Regression Showing the Estimated Variance in Uptake and Model for Each Step

	χ^2	Df	Nagelkerke R^2	Sig.
Step 1				
Model	19.262	8	.227	.014*
Step 2	-.077	1	.226	
Model	19.185	7		.008**
Step 3	-1.097	1	.214	
Model	18.087	6		.006**
Step 4	-.673	1	.206	
Model	17.415	5		.004**
Step 5	-1.247	1	.193	
Model	16.168	4		.003**
Step 6	-1.097	1	.180	
Model	15.071	3		.002**
Step 7	-1.706	1	.161	
Model	13.364	2		.001***

Note. *significant at $p<0.05$ threshold; **significant at $p<0.01$ threshold; ***significant at $p<0.001$.

Table 4 displays the variables in the model at each step. Step one includes all independent variables and as previously mentioned this model is statistically significant. However, Table 4 shows that only one variable, IMD decile was a significant predictor of uptake ($p<.05$). This suggests that participants living in less deprived areas are more likely to start the intervention.

As Table 4 shows, an independent variable was removed at each step. The variables were removed in the following order, step two: age; step three: motivation;

step four: opportunity; step five: BMI; step six: ethnicity; step seven: gender. The backward binary logistic regression stops removing variables when the remaining variables are significant predictors. In step seven, the final variables in the model were capability and IMD decile. The capability variable was significant at p=.015; the odds ratio suggests that participants with higher capability scores were 1.223 more likely to start the intervention. The IMD decile variable was also a significant predictor of uptake (p<.05) where the odds ratio indicated that participants living in less deprived areas were 1.200 more likely to start the intervention.

Table 4

Variables in the Model at Each Step of the Binary Logistic Regression

		B	S.E	Sig.	Exp(B)	95% CI for Exp(B)	
						Lower	Upper
Step 1	Opportunity	.166	.130	.204	1.180	.914	1.524
	Motivation	-.112	.108	.297	.894	.724	1.104
	Capability	.179	.101	.076	1.196	.981	1.456
	Age	.006	.020	.782	1.006	.967	1.046
	Gender	.733	.681	.282	2.081	.548	7.904
	Ethnicity	20.173	22113.064	.999	576874496.13	.000	
	BMI	.040	.033	.232	1.041	.975	1.111
	IMD decile	.209	.106	.050*	1.232	1.000	1.517
	Constant	-26.198	22113.064	.999	.000		
Step 2	Opportunity	.167	.130	.201	1.181	.915	1.526
	Motivation	-.110	.108	.305	.895	.725	1.106

	Capability	.179	.101	0.76	1.196	.981	1.458
	Gender	.769	.671	.251	2.158	.580	8.036
	Ethnicity	20.174	22086.854	.999	577241817.17	.000	
	BMI	.038	.033	.244	1.039	.974	1.107
	IMD decile	.219	.100	.029*	1.244	1.022	1.514
	Constant	-25.954	22086.854	.999	.000		
Step 3	Opportunity	.086	.102	.404	1.089	.891	1.332
	Capability	.160	.096	.094	1.174	.973	1.417
	Gender	.788	.666	.236	2.200	.596	8.111
	Ethnicity	19.889	22455.576	.999	434322672.17	.000	
	BMI	.035	.032	.279	1.035	.972	1.103
	IMD decile	.208	.099	.035*	1.231	1.015	1.494
	Constant	-25.579	22455.576	.999	.000		
Step 4	Capability	.208	.084	.013*	1.232	1.045	1.452
	Gender	.828	.667	.214	2.289	.620	8.452
	Ethnicity	19.802	22638.822	.999	398104879.19	.000	
	BMI	.035	.032	.274	1.936	.973	1.103

		B	SE	Sig	Exp(B)	Lower	Upper
	IMD decile	.203	.097	.036*	1.225	1.013	1.481
	Constant	-24.880	22638.822	.999	.000		
Step 5	Capability	.217	.084	.010**	1.243	1.054	1.465
	Gender	.796	.660	.228	2.217	.608	8.087
	Ethnicity	19.601	22762.189	.999	325561711.87	.000	
	IMD decile	.182	.093	.052	1.199	.999	1.440
	Constant	-23.405	22762.189	.999	.000		
Step 6	Capability	.226	.084	.007**	1.253	1.062	1.478
	Gender	.817	.660	.216	2.263	.621	8.244
	IMD decile	.180	.093	.054	1.198	.997	1.338
	Constant	-3.921	1.539	.011*	.020		
Step 7	Capability	.201	.083	.015*	1.223	1.040	1.437
	IMD decile	.182	.093	.050*	1.200	1.000	1.440
	Constant	-3.353	1.482	.024*	.035		

Note. *significant at $p<0.05$ threshold; **significant at $p<0.01$ threshold; ***significant at $p<0.001$; IMD: Index of multiple deprivation decile

Discussion

The current study aimed to investigate if the COM-B model could predict uptake to a tier two WMP. This involved newly referred clients to a WMP, completing an online questionnaire prior to beginning the intervention. The final regression model, which included two significant variables, explained 16.1% of the variance in uptake. The variables which predicted uptake included capability and IMD decile.

The study partially supported the first hypothesis that higher perceived capability, opportunity, and motivation would be more likely to predict uptake. The results show that higher scores on the capability variable indicated that participants were more likely to start the intervention. This finding is consistent with a literature review commissioned by PHE (2018). This research examined existing literature regarding uptake and retention to WMPs and interpreted the findings using the COM-B model. The findings of this review suggested that uptake was more likely if people had the knowledge and psychological skills to change their behaviour (PHE, 2018).

The capability variable in the COM-B model includes the physical and psychological capability to engage in a specific behaviour. This includes the person's mental state, knowledge, and skills as well as their physical state which could include strength and abilities (Michie et al., 2011). On the surface, the capability variable appears to relate to factors which are intrinsically individual in nature. However, Marmot et al. (2010) recognised capability as a dimension of the social determinants of health, reflecting socioeconomic and environmental factors associated with health inequalities. For example, knowledge and skills relate to the opportunities that the person has had in their life to learn and develop through

education and resources available to them in their environment. The concept of reducing health inequalities to help maximise people's capabilities was recognised as a key priority in the Marmot review (Marmot et al., 2010). Marmot et al. (2010) highlight the importance of the accessibility to good education and lifelong learning to maximise capabilities and improve health outcomes.

Focusing on maximising capabilities through education opportunities and lifelong learning is observed through the psychoeducational component of many lifestyle interventions, including WMPs. In the literature, health-based education interventions are referred to as therapeutic patient education which aim to upskill and empower people to engage in health behaviours (Vargas-Schaffer & Cogan, 2014). A recent systematic review and meta-analysis reported that therapeutic patient education interventions for adults with obesity and diabetes presented significant improvements in biomedical markers and reductions in body weight (Correia et al., 2022). Health education around obesity has also been provided into schools (Shaya et al., 2008). Increasing health education and creating healthier environments reflects an example of upstream interventions for psychologists working in public health settings (Flynn et al., 2006). However, Flynn et al. (2006) highlighted that as obesity rates continue to rise then there needs to be significant investment in upstream interventions.

In this study, motivation and opportunity were not significant predictors of uptake which means that the first hypothesis was not fully supported. The PHE literature review suggested that people who were motivated were more likely to attend, however, for motivation to be effective, people needed to have good social opportunity (PHE, 2018). Other research investigating the predictive validity of the COM-B model found that capability, opportunity and motivation were all significant

predictors of adherence to specific COVID-19 guidance behaviours (Armitage et al., 2021; Armitage et al., 2023). However, it is important to acknowledge that as this appears to be the first study utilising the COM-B model to predict uptake to a WMP, rather than where participants have attended a proportion of a programme.

The second hypothesis of the study proposed that participant characteristics, specifically lower level of deprivation, would significantly increase the likelihood of uptake to the WMP. The study found that IMD decile was a significant predictor of uptake, indicating that participants living in less deprived areas were more likely to start the intervention. Therefore, participants living in more deprived neighbourhoods were more likely to not attend the first session.

The impact of IMD decile in this study supports existing research which acknowledges an association between relative deprivation and disengagement in health promoting behaviours (Stringhini et al., 2010). However, the results of the current study do not provide an explanation of how IMD decile relates to uptake and attrition, particularly as the IMD decile comprises of seven domains relating to relative deprivation (Ministry of Housing, Communities & Local Government, 2019). IMD decile provides a score of relative deprivation based on the participant's local area, but this may not be an accurate reflection of the participant's current socioeconomic circumstance. Stafford et al. (2010) cited that local community deprivation is associated with obesity independent of an individual's socioeconomic status. However, this finding does not provide evidence of how services can use IMD deciles or indicators of multiple deprivation to reduce attrition. In a systematic review, other indicators of deprivation and socioeconomic status, such as household income, education, and employment, were inversely associated with obesity in the United Kingdom (El-Sayed et al., 2012). However, El-Sayed et al. (2012) also recognised

the limitations in the understanding of how socioeconomic status is related to obesity.

Strengths and Limitations

To the best of the researcher's knowledge, this is the first study to use the COM-B model to predict uptake to a WMP. This topic is particularly important for several reasons. Firstly, understanding, reducing and preventing obesity is a highly prioritised public health agenda (Flint & Oliver, 2019). Due to this, public resources and finances have been used to develop and implement weight management interventions. Secondly, attrition is a challenging phenomenon to research due to the complexities in recruiting people who have disengaged from services (Coupe et al., 2018). However, this is crucial area to explore as the research suggests that successful weight loss is more likely to be achieved by those who engage in appropriate support (Moroshko et al., 2011). Therefore understanding the factors associated with uptake and attrition, and the theoretical underpinnings and models to predict uptake and attrition, may support the reduction of this occurring.

A strength of this study relates to the use of an accessible and easy to understand questionnaire. The questionnaire was initially chosen due to it being designed to be tailored to different populations, health behaviours, and research questions, being short in length and adaptable to the study. The modifications were made in collaboration with several members of the public health team and WMP. Health literacy and readability of the questionnaire was also addressed through consultation with a healthcare professional who had completed additional training in health literacy.

A limitation within this study is the lack of service user involvement in the design of the study and the questionnaire. Service-user involvement was not achieved due to the restrictions and limitations of the researchers from the collaborating Council governance process. The researcher was not granted authorisation to liaise with clients of the WMP due to data protection policies held by the council.

Additionally, the study only captured responses from clients who received their induction pack via email however some clients also received induction packs through the post. This represents a limitation of the data collection process for the study and highlights a potential bias. As the IMD indices show, there is a wide range of levels of multiple deprivation represented in the area that the study took place. Individuals who live in more deprived areas may also experience digital exclusion, where they do not have access to computers, smart phones and tablets (Honeyman et al., 2020). Due to this, individuals experience a disadvantage in terms of their access to and engagement in digital healthcare. Capturing data from participants who experience this level of deprivation may have provided further insights into how capability, opportunity, and motivation relates to uptake, attrition, and disengagement from weight loss support. It may have also been beneficial to collate data relating to household income and participant education level. This could have provided further insight into the socioeconomic status of participants, and thus the reliability of the IMD decile.

The study used a backward stepwise method to conduct the binary logistic regression. The backward method objectively removes variables based on the *p*-value (Mutava et al., 2017). However, research has highlighted potential limitations of this method, including the possibility of inflated results and type II errors (Smith,

2018). Finally, several factors may impact the generalisability of the results. Firstly, the participants were recruited from one public health team serving one county within England. The sample was predominantly participants who identify as women and people who represent a White British ethnicity. Finally, the sample size for the study was modest, however this may impact upon the significance of the findings.

Implications for Research and Clinical Practice

One of the key findings from this study is that participants were more likely to disengage and not start the WMP if they lived in more deprived areas. This suggests that service development needs to focus on improving access for disadvantaged and deprived communities. A starting point for this may be for clinical psychologists to work collaboratively with local communities and stakeholders to design and implement community-based interventions. This role links to the neighbourhood community psychologist posts embedded within local authorities. These posts aim to provide psychologically informed expertise and strengthen the resources of a community (BPS, 2021b). This may include community outreach such as drop-in services or community-based groups to promote physical activity and social inclusion. Examples of these groups include 'walking for health' groups which have been shown to be effective and present a wide range of health benefits (Hanson & Jones, 2015).

The role of psychology in the community could include training other healthcare professionals or community members to deliver psychologically informed care and educational opportunities within community settings. This would be particularly important as the results of this study highlight that participants who perceived themselves to have lower skills and knowledge to attend the weight

management group, were more likely to not attend. Swanton (2008) recognised that a whole-system approach is crucial to improve the health of the nation and reduce obesity. Swanton (2008) highlighted that key community members, such as pharmacists or faith leaders, could have a central role in supporting people from disadvantaged or marginalised groups to access local resources, gain knowledge and skills, and receive targeted weight loss support.

The current study utilised the COM-B self-evaluation questionnaire in a population of adults looking to lose weight through a local WMP. Implementing the COM-B self-evaluation questionnaire routinely with clients referred to WMPs could provide vital information which may indicate where a client may need additional support to increase the likelihood of engagement and adherence to the programme. It could also be useful to monitor client progress or alert staff members to any changes which could impact attendance. This may include developing an engagement toolkit for services across the UK to recognise where people may need additional support and to provide person-centred interventions.

Future research in this area may benefit from exploring the barriers and facilitators to help-seeking for weight management. This could develop a richer understanding how these factors as associated with uptake, attrition, and level of deprivation. Finally, future research could benefit from replicating this study, but collating household income and education level data with a larger and more diverse sample and in multiple WMPs across the United Kingdom.

Conclusion

This study aimed to predict uptake to a tier two WMP using the COM-B model. The study found that a regression model included two significant predictors

(capability and IMD decile) of uptake. The study found that participants were more likely to attend the WMP if they lived in less deprived areas and if they had higher perceived physical and psychological capability to attend. The findings highlight the importance of upstream interventions to up-skill individuals and communities, address health inequalities, and improve health outcomes for communities and the population as a whole. Future research may also benefit from replicating the study using increased sample sizes and more diverse populations across different WMPs in the United Kingdom.

References

Adams J. (2020). Addressing socioeconomic inequalities in obesity: Democratising access to resources for achieving and maintaining a healthy weight. *PLoS Medicine*, *17*(7), e1003243. https://doi.org/10.1371/journal.pmed.1003243

Armitage, C. J., & Munro, K. J. (2023). Can the capabilities, opportunities and motivations model predict health behavior 1 year later?. *Health Psychology*, *42*(4), 270. DOI: 10.1037/hea0001269

Armitage, C. J., Keyworth, C., Leather, J. Z., Byrne-Davis, L., & Epton, T. (2021). Identifying targets for interventions to support public adherence to government instructions to reduce transmission of SARS-CoV-2. *BMC Public Health*, *21*(1), 1-6. https://doi.org/10.1186/s12889-021-10574-6

Armitage, C. J., Keyworth, C., Gartland, N., Coleman, A., Fishwick, D., Johnson, S., & Van Tongeren, M. (2023). Identifying targets for interventions to support public use of face coverings. *British Journal of Health Psychology*, *28*(1), 208-220. https://doi.org/10.1111/bjhp.12620

Ball, K., & Crawford, D. (2005). Socioeconomic status and weight change in adults: A review. *Social Science & Medicine (1982)*, *60*(9), 1987–2010. https://doi.org/10.1016/j.socscimed.2004.08.056

British Psychological Society. (2021a). *Ethics guidelines for internet-mediated research.* https://doi.org/10.53841/bpsrep.2021.rep155

British Psychological Society. (2021b). *A neighbourhood community psychologist: Potential and possibilities.*

Burgess, E., Hassmén, P., & Pumpa, K. L. (2017). Determinants of adherence to
lifestyle intervention in adults with obesity: A systematic review. *Clinical
Obesity, 7*(3), 123-135. https://doi.org/10.1111/cob.12183

Bryant, P. H., Hess, A., & Bowen, P. G. (2015). Social determinants of health related
to obesity. *The Journal for Nurse Practitioners*, *11*(2), 220-225.
https://doi.org/10.1016/j.nurpra.2014.10.027

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159.
http://dx.doi.org/10.1037/0033-2909.112.1.155

Correia, J. C., Waqas, A., Huat, T. S., Gariani, K., Jornayvaz, F. R., Golay, A., &
Pataky, Z. (2022). Effectiveness of Therapeutic Patient Education
Interventions in Obesity and Diabetes: A Systematic Review and Meta-
Analysis of Randomized Controlled Trials. *Nutrients*, *14*(18), 3807.
https://doi.org/10.3390/nu14183807

Coupe, N., Cotterill, S., & Peters, S. (2018). Tailoring lifestyle interventions to low
socio-economic populations: A qualitative study. *BMC Public Health*, *18*(1),
967. https://doi.org/10.1186/s12889-018-5877-8

Coupe, N., Cotterill, S., & Peters, S. (2022). Enhancing community weight loss
groups in a low socioeconomic status area: Application of the COM-B model
and Behaviour Change Wheel. *Health Expectations*, *25*(5), 2043-2055. DOI:
10.1111/hex.13325

Department of Health. (2011). *Healthy Lives, Health People: A Call to Action on
Obesity in England*. London: UK Government.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/
attachment_data/file/213720/dh_130487.pdf

Department of Health. (2013). *Developing a specification for lifestyle weight management services: Best practice guidance for tier 2 services.* London: UK Government. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/142723/Weight_Management_Service_Spec_FINAL_with_IRB.pdf

Ells, L., Watson, P., Carlebach, S., O'Malley, C., Jones, D., Machaira, T., Whittaker, V., Clements, H., Walker, P., Needham, K., Summerbell, C., Coulton, V., & Araujo-Soares, V. (2018). A mixed method evaluation of adult tier 2 lifestyle weight management service provision across a county in Northern England. *Clinical Obesity, 8*(3), 191-202. https://doi.org/10.1111/cob.12250

El-Sayed, A. M., Scarborough, P., & Galea, S. (2012). Unevenly distributed: A systematic review of the health literature about socioeconomic inequalities in adult obesity in the United Kingdom. *BMC Public Health*, *12*, 18. https://doi.org/10.1186/1471-2458-12-18

Flesch, R. (1948). A new readability yardstick. *Journal of Applied Psychology, 32*(3), 221–233. https://doi.org/10.1037/h0057532

Flint, S. W., & Oliver, E. J. (2019). Seven-year itch: The UK Government's difficult relationship with the food and drink industry since Healthy Lives, Healthy People: A Call to Action on Obesity in England (2011). *Public Health Nutrition*, *22*(7), 1326-1329. https://doi.org/10.1017/S1368980019000053

Flynn, M. A., McNeil, D. A., Maloff, B., Mutasingwa, D., Wu, M., Ford, C., & Tough, S. C. (2006). Reducing obesity and related chronic disease risk in children and youth: A synthesis of evidence with 'best practice'

recommendations. *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity*, *7 Suppl 1*, 7–66. https://doi.org/10.1111/j.1467-789X.2006.00242.x

Hanson, S., & Jones, A. (2015). Is there evidence that walking groups have health benefits? A systematic review and meta-analysis. *British Journal of Sports Medicine*, *49*(11), 710-715. doi:10.1136/bjsports-2014-094157

Harper, D. (2016). Beyond individual therapy: Towards a psychosocial approach to public mental health. *The Psychologist, 29*(June), 440-444.

Honeyman, M., Maguire, D., Evans, H., & Davies, A. (2020). Digital technology and health inequalities: A scoping review. *Cardiff: Public Health Wales NHS Trust.*

Hutchinson, N., Baird, G. L., & Garg, M. (2016). Examining the Reading Level of Internet Medical Information for Common Internal Medicine Diagnoses. *The American Journal of Medicine*, *129*(6), 637–639. https://doi.org/10.1016/j.amjmed.2016.01.008

Keyworth, C., Epton, T., Goldthorpe, J., Calam, R., & Armitage, C. J. (2020). Acceptability, reliability, and validity of a brief measure of capabilities, opportunities, and motivations ("COM-B"). *British Journal of Health Psychology*, *25*(3), 474-501. https://doi.org/10.1111/bjhp.12417

MacDonald, D. E., & Cassin, S. E. (2017). Nondieting psychological interventions for individuals who are overweight or obese: A systematic review of the evidence. *Psychopathology Review*, *4*(3), 290-318. DOI:10.5127/pr.037014

Marmot, M., Allen, J., Goldblatt, P., Boyce, T., McNeish, D., Grady, M., & Geddes, I. (2010). *The Marmot review: Fair society, healthy lives.* London: UCL.

Michelini, I., Falchi, A. G., Muggia, C., Grecchi, I., Montagna, E., De Silvestri, A., & Tinelli, C. (2014). Early dropout predictive factors in obesity treatment. *Nutrition Research and Practice*, *8*(1), 94–102. https://doi.org/10.4162/nrp.2014.8.1.94

Michie, S., Van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, *6*(1), 1-12. https://doi.org/10.1186/1748-5908-6-42

Michie, S., West, R., Campbell, R., Brown, J., & Gainforth, H. (2014). ABC of behaviour change theories: An essential resource for researchers. *Policy Makers and Practitioners*, *402*.

Michou, M., Panagiotakos, D. B., & Costarelli, V. (2018). Low health literacy and excess body weight: A systematic review. *Central European Journal of Public Health*, *26*(3), 234-241. DOI: 10.21101/cejph.a5172

Miller, B. M., & Brennan, L. (2015). Measuring and reporting attrition from obesity treatment programs: A call to action!. *Obesity Research & Clinical Practice*, *9*(3), 187-202. https://doi.org/10.1016/j.orcp.2014.08.007

Ministry of Housing, Communities and Local Government. (2019). *The English indices of deprivation 2019 (IoD2019): Statistical release.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835115/IoD2019_Statistical_Release.pdf

Moroshko, I., Brennan, L., & O'Brien, P. (2011). Predictors of dropout in weight loss interventions: A systematic review of the literature. *Obesity Reviews*, *12*(11), 912-934. https://doi.org/10.1111/j.1467-789X.2011.00915.x

Mutava, S. M., Alii, L. K., & Adem, A. O. (2017). Impact of Automatic Backward

Model Selection Criterion on the Bias of the Parameters in Logistic

Regression Model. *IOSR Journal of Mathematics, 13*(4), 25-33. DOI:

10.9790/5728-1304012533

National Institute for Health and Care Excellence. (2014a). *Weight management:*

Lifestyle services for overweight or obese adults [Public health guideline

PH53].

National Institute for Health and Care Excellence. (2014b). Behaviour change:

Individual approaches [Public health guideline PH49]

National Institute for Health and Care Excellence. (2022). *Obesity: Identification,*

assessment and management clinical guideline [CG189].

NHS Digital. (2022). *Health Survey for England 2021, part 1: Overweight and obesity*

in adults.

Nobles, J. D., Perez, A., Skelton, J. A., Spence, N. D., & Ball, G. D. (2018). The

engagement pathway: A conceptual framework of engagement-related terms

in weight management. *Obesity Research & Clinical Practice, 12*(2), 133–138.

https://doi.org/10.1016/j.orcp.2017.12.005

Park, D. Y. (2011). Utilizing the Health Belief Model to predicting female middle

school students' behavioral intention of weight reduction by weight

status. *Nutrition Research and Practice*, *5*(4), 337-348.

https://doi.org/10.4162/nrp.2011.5.4.337

Ponzo, V., Scumaci, E., Goitre, I., Beccuti, G., Benso, A., Belcastro, S., Crespi, C.,

De Michieli, F., Pellegrini, M., Scuntero, P., Marzola, E., Abbate-Daga, G.,

Ghigo, E., Broglio, F., & Bo, S. (2021). Predictors of attrition from a weight loss program. A study of adult patients with obesity in a community setting. *Eating and Weight Disorders: EWD*, *26*(6), 1729–1736. https://doi.org/10.1007/s40519-020-00990-9

Public Health England. (2017). *A guide to delivering and commissioning tier 2 adult weight management services.*

Public Health England. (2020). *Healthier weight: Defence insights into tackling a national challenge.*

Sarwer, D. B., & Polonsky, H. M. (2016). The Psychosocial Burden of Obesity. *Endocrinology and Metabolism Clinics of North America*, *45*(3), 677–688. https://doi.org/10.1016/j.ecl.2016.04.016

Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia & Analgesia*, *126*(5), 1763-1768.

Shaw, K., O'Rourke, P., Del Mar, C., & Kenardy, J. (2005). Psychological interventions for overweight or obesity. *The Cochrane Database of Systematic Reviews*, (2), CD003818. https://doi.org/10.1002/14651858.CD003818.pub2

Shaya, F. T., Flores, D., Gbarayor, C. M., & Wang, J. (2008). School-based obesity interventions: A literature review. *Journal of School Health*, *78*(4), 189-196. https://doi.org/10.1111/j.1746-1561.2008.00285.x

Shrestha, N. (2020). Detecting multicollinearity in regression analysis. *American Journal of Applied Mathematics and Statistics*, *8*(2), 39-42. DOI:10.12691/ajams-8-2-1

Smith, G. (2018). Step away from stepwise. *J Big Data,* 5, 32.

    https://doi.org/10.1186/s40537-018-0143-6

Stafford, M., Brunner, E. J., Head, J., & Ross, N. A. (2010). Deprivation and the

    development of obesity: A multilevel, longitudinal study in England. *American*

    Journal of Preventive Medicine, *39*(2), 130-139.

    https://doi.org/10.1016/j.amepre.2010.03.021

Stringhini, S., Sabia, S., Shipley, M., Brunner, E., Nabi, H., Kivimaki, M., & Singh-

    Manoux, A. (2010). Association of socioeconomic position with health

    behaviors and mortality. *JAMA, 303*(12), 1159–1166.

    https://doi.org/10.1001/jama.2010.297

Swanton, K. (2008). *Healthy weight, healthy lives: A toolkit for developing local*

    strategies. London Department of Health.

Swift, J. K., Greenberg, R. P., Tompkins, K. A., & Parkin, S. R. (2017). Treatment

    refusal and premature termination in psychotherapy, pharmacotherapy, and

    their combination: A meta-analysis of head-to-head comparisons.

    Psychotherapy (Chicago, Ill.), 54(1), 47–57.

    https://doi.org/10.1037/pst0000104

Sutcliffe, K., Richardson, M., Rees, R., Burchett, H., Melendez-Torres, G. J.,

    Stansfield, C., & Thomas, J. (2016). *What are the critical features of*

    successful Tier 2 weight management programmes for adults? A systematic

    review to identify the programme characteristics, and combinations of

    characteristics, that are associated with successful weight loss. London:

    EPPI-Centre, Social Science Research Unit, UCL Institute of Education,

University College London.

https://researchonline.lshtm.ac.uk/id/eprint/4656948

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, *48*, 1273-1296. https://doi.org/10.1007/s11165-016-9602-2

Teixeira, P. J., Going, S. B., Houtkooper, L. B., Cussler, E. C., Metcalfe, L. L., Blew, R. M., Sardinha, L. B. & Lohman, T. G. (2004). Pretreatment predictors of attrition and successful weight management in women. *International Journal of Obesity, 28*(9), 1124-1133. https://doi.org/10.1038/sj.ijo.0802727

Teixeira, P. J., & Marques, M. M. (2017). Health Behavior Change for Obesity Management. *Obesity Facts, 10*(6), 666–673. https://doi.org/10.1159/000484933

Thomson, M., Martin, A., Logue, J., Wells, V., & Simpson, S. A. (2020). Barriers and facilitators of successful weight loss during participation in behavioural weight management programmes: A protocol for a systematic review. *Systematic Reviews, 9*(1), 1-8. https://doi-org.sheffield.idm.oclc.org/10.1186/s13643-020-01427-1

Vargas-Schaffer, G., & Cogan, J. (2014). Patient therapeutic education: Placing the patient at the centre of the WHO analgesic ladder. *Canadian Family Physician Medecin de Famille Canadien, 60*(3), 235–241.

Williams, O., & Fullagar, S. (2019). Lifestyle drift and the phenomenon of 'citizen shift' in contemporary UK health policy. *Sociology of Health & Illness, 41*(1), 20–35. https://doi.org/10.1111/1467-9566.12783

Willmott, T. J., Pang, B., & Rundle-Thiele, S. (2021). Capability, opportunity, and

motivation: An across contexts empirical examination of the COM-B

model. *BMC Public Health*, *21*(1), 1014. https://doi.org/10.1186/s12889-021-

11019-w

World Health Organisation. (2021). *Obesity and overweight fact sheet.*

https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

Appendix A

Ethical approval letter

Alexandra Drake
Registration number: 200183699
Psychology
Programme: DClinPsy

Dear Alexandra

PROJECT TITLE: Using the health belief model to predict pre-intervention attrition in a tier two weight management
programme
APPLICATION: Reference Number 044702

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 03/05/2022 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 044702 (form submission date: 21/04/2022); (expected project end date:
  30/09/2023).
- Participant information sheet 1101041 version 5 (21/04/2022).
- Participant consent form 1101042 version 2 (21/04/2022).

If during the course of the project you need to deviate significantly from the above-approved documentation please inform
me since written approval will be required.

Your responsibilities in delivering this research project are set out at the end of this letter.

Yours sincerely

Department Of Psychology Research Ethics Committee
Ethics Administrator
Psychology

Please note the following responsibilities of the researcher in delivering the research project:

- The project must abide by the University's Research Ethics Policy:
  https://www.sheffield.ac.uk/rs/ethicsandintegrity/ethicspolicy/approval-procedure
- The project must abide by the University's Good Research & Innovation Practices Policy:
  https://www.sheffield.ac.uk/polopoly_fs/1.671066!/file/GRIPPolicy.pdf
- The researcher must inform their supervisor (in the case of a student) or Ethics Administrator (in the case of a member
  of staff) of any significant changes to the project or the approved documentation.
- The researcher must comply with the requirements of the law and relevant guidelines relating to security and
  confidentiality of personal data.
- The researcher is responsible for effectively managing the data collected both during and after the end of the project
  in line with best practice, and any relevant legislative, regulatory or contractual requirements.

Appendix B

Research Application Approval from Derbyshire County Council

Dear Alex,

Thank you for submitting your application to undertake research with a sample of LLBD
clients for your study investigating 'Using the health belief model to predict pre-intervention attrition in a tier two weight management programme.'

We have reviewed your application form and the accompanying supporting documents and can confirm that this project has been approved to proceed.

As per written communications regarding naming of the service in any publication, confirmation has been received that this does not present an issue.

We wish you all the best with your research and we do ask that you keep us informed of the final outcome and share any publication details,

Kind regards
Research Governance Panel (RGP)
Adult Social Care and Health Directorate, Derbyshire County Council

Appendix C

Invite to participate in the study – embedded within an email

Research Project Sheffield University & Live Life Better Derbyshire.

Hi – I'm Sharon the Weight Management Service Manager, welcome to Live Life

Better Derbyshire 😊

Live Life Better Derbyshire are always looking at ways to improve our client support - we would really appreciate you spending about 10 minutes of your valuable time completing the questionnaire via the link below. You are the people we most need to hear from – so that we can continue to make a difference.

Taking part is completely optional, but if you do - please accept my sincere **thank you's** in advance.

https://shef.qualtrics.com/jfe/form/SV_cSXRNKMD49VSyKW

Participant information sheet

Information Sheet

Why do or don't people take part in a weight management programme?

What is the project's purpose?

You have been invited to take part in a research project because you have signed up for the weight management programme with Live Life Better Derbyshire. We are looking at possible reasons why people choose to take part in the weight management programme or not.

What will I have to do if I take part?

We invite you to fill in a questionnaire before you start the 12-week weight management programme. The questionnaire will ask about topics like motivation, support, and resources available to you in taking on the programme. The questionnaire will also ask some questions about your age, sex, ethnicity, where you live and your current weight. The questionnaire should take 5-10 minutes to complete, and you only need to do this once.

Do I have to take part?

Taking part in this research is voluntary and it will not affect the support that you will receive in the weight management programme. Likewise, if you do not wish to take part in the questionnaire, it will not affect your 12-week weight management programme with Live Life Better Derbyshire. You may also withdraw from the research at any time, without giving a reason why.

It is up to you to decide whether to take part. If you do decide to take part, you will be asked to sign a consent form before you begin the questionnaire.

If you change your mind after completing the questionnaire, please contact the researcher (details below) within two weeks to withdraw from the study.

What are the possible benefits of taking part?

Whilst there are no immediate benefits of completing the questionnaire, it is hoped that this work will lead to a better understanding of why people do or don't want to take part in weight management groups. It could also help to improve the service and help people get the right support with weight management.

What are the possible disadvantages of taking part?

Answering questions about your weight might be distressing for some people. If this is the case, you are free to withdraw from the research at any point by closing the browser. Information about sources of support will be provided following participation or you can contact the researcher at any point for this information.

What happens with my answers and personal information?

All the information that you provide will be strictly confidential and will only be accessible to members of the research team. The only exception for this would be if your answers led the research team to be concerned for the safety of you or any others. In these circumstances we would have a duty of care to pass the information on.

You will not be able to be identified in any reports or publications arising from this research project. If you agree to us sharing the information you provide with other researchers (e.g. by making it available in a data archive) then your personal details will not be included unless you explicitly request this.

Data protection

New data protection legislation came into effect across the EU, including the UK on 25th May 2018; this means that we need to provide you with some further information relating to how your personal information will be used and managed within this research project. This is in addition to the details provided within the information sheet that has already been given to you.

The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

To collect and use your personal information as part of this research project, we must have a basis in law to do so. The basis that we are using is that the research is

'a task in the public interest'. As we will be collecting some data that is defined in the legislation as more sensitive (information about you and your health) we also need to let you know that we are applying an additional condition in law: that the use of your data is 'necessary for scientific or historical research purposes'.

Further information, including details about how and why the University processes your personal information, how we keep your information secure, and your legal rights (including how to complain if you feel that your personal information has not been handled correctly), can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

Further information

This research has been ethically approved by the University of Sheffield. This means that the University is responsible for looking after your information and using it properly.

Who can I contact if I have a question or complaint?

If you have a query about the research or wish to raise a complaint, please contact the researcher, Alex Drake (adrake4@sheffield.ac.uk), or their supervisor, Dr Vyv Huddy (V.huddy@sheffield.ac.uk).

Alternatively, you can contact Professor Gillian Hardy, Programme Director at the University of Sheffield (g.hardy@sheffield.ac.uk) if you wish to raise a complaint to someone external to the research team.

You can also contact Sharon Putt, Team Manager at Live Life Better Derbyshire (0800 085 2299), if you have a question or concern about the weight management programme.

Consent form

**Why do or don't people take part in a weight management programme?
Consent Form**

Please tick the appropriate boxes	YES	NO
Taking Part in the Project		
I have read and understood the project information sheet dated 28/11/2021 or the project has been fully explained to me. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	☐	☐
I have been given the opportunity to ask questions about the project.	☐	☐
I agree to take part in the project. I understand that taking part in the project will include completing an online questionnaire.	☐	☐
I understand that my taking part is voluntary and that I can withdraw from the study at any time; I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.	☐	☐
I understand that my taking part in the project is not part of the weight management programme and it will not affect the support I receive from the weight management programme.	☐	☐
How my information will be used during and after the project		
I understand my personal details such as name, phone number, address and email address etc. will not be revealed to people outside the project.	☐	☐
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I give permission for the data that I provide to be deposited in an open-access repository so it can be used for future research and learning.	☐	☐
So that the information you provide can be used legally by the researchers		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	☐	☐

Name of participant [printed]   Signature   Date

Name of Researcher [printed]   Signature   Date

Project contact details for further information:

Lead Researcher: Alex Drake (adrake4@sheffield.ac.uk)

Supervisor: Dr Vyv Huddy (v.huddy@sheffield.ac.uk)

In the event of a complaint, please contact Head of Department: Professor Gillian Hardy

(g.hardy@sheffield.ac.uk)

Address

Department of Psychology,

University of Sheffield,

Cathedral Court,

1 Vicar Lane,

Sheffield,

S1 2LT

<div style="border:1px solid">

Telephone

If you wish to contact any of the

abovenamed people by telephone, please call:

Research Support Officer Amrit Sinha on: **0114**

2226650

A message will be passed onto the staff member,

who will return your call.

</div>

Appendix F

Debrief form

Why do or don't people take part in weight management programmes?

This research wanted to find out the possible reasons why people do or don't take part in weight management programmes.

You were asked to fill in some personal details about yourself and then a short questionnaire about your motivation, support and resources that you have to start the weight management group with Live Life Better Derbyshire. This was to understand how your motivation, support and the resources available affects whether you take part in the weight management programme or not.

We would like to thank you for participating in this research. Your time and thoughtful responses are greatly appreciated.

- If you have any concerns about your mental health and wellbeing following the questionnaire, please contact the researcher at any point for information about sources of support
- Alternatively, you can contact your GP if you have concerns about your mental health and wellbeing

If you wish to withdraw your data you can do so without reason, by emailing the researcher listed below and providing details of your email address that was registered in the study. You can withdraw your data up to two weeks after completing the entire study.

Who can I contact if I have a question or complaint?

If you have a query about the research or wish to raise a complaint, please contact the researcher, Alex Drake (adrake4@sheffield.ac.uk), or their supervisor, Dr Vyv Huddy (V.huddy@sheffield.ac.uk).

Alternatively, you can contact Professor Gillian Hardy, Programme Director at the University of Sheffield (g.hardy@sheffield.ac.uk) if you wish to raise a complaint to someone external to the research team.

You can also contact Sharon Putt, Team Manager at Live Life Better Derbyshire (0800 085 2299), if you have a question or concern about the weight management programme.

Appendix G

Readability calculator results for the COM-B measure

Number of characters (without spaces):	1,493.00
Number of words:	412.00
Number of sentences:	33.00
Lexical Density:	69.90
Average number of characters per word:	3.62
Average number of syllables per word:	1.46
Average number of words per sentence:	12.48

Indication of the number of years of formal education that a person requires in order to easily understand the text on the first reading	
Gunning Fog index:	8.68

Approximate representation of the U.S. grade level needed to comprehend the text:	
Coleman Liau index:	3.14
Flesch Kincaid Grade level:	6.46
ARI (Automated Readability Index):	1.88
SMOG:	9.54

Flesch Reading Ease:	70.96

Appendix H

Qualtrics questionnaire including demographic questions and the COM-B self-evaluation measure

Participant demographic questions

1. Participant initials:………………………………………………………..

2. Date of birth:…………………………………………………………

3. Postcode:……………………………………………………………..

4. Sex: Male   Female   Other   Prefer not to say

5. Ethnicity:………………………………………………………………

6. Current weight:…………………………………………………………

7. Height:…………………………………………………………………

The Capability, Opportunity, Motivation – Behaviour measure (Keyworth et al., 2020)

1. **I have the PHYSICAL opportunity to attend Live Life Better Derbyshire sessions?**

   What is PHYSICAL opportunity?

   Eg. Having enough time, having a computer or tablet to join the sessions, having a quiet area where I can listen to the sessions, having access to a car or public transport (for face-to-face sessions), getting reminders for sessions

Please rate	Strongly disagree										Strongly Agree
	0	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

2. **I have the SOCIAL opportunity to attend Live Life Better Derbyshire sessions?**

What is SOCIAL opportunity?

Eg. Support from friends, family, advisers, colleagues, community/religious groups

Please rate | Strongly disagree | | | | | | | | | | Strongly Agree

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

3. I am motivated to attend Live Life Better Derbyshire sessions?

What is motivation?

Wanting to attend the sessions (e.g I want to , I have the desire to, I feel the need to)

Please rate | Strongly disagree | | | | | | | | | | Strongly Agree

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

4. Attending Live Life Better Derbyshire sessions is something that I will do automatically?

Automatic motivation means doing something without thinking. You won't have to remember to do something (e.g something I do before I realise I'm doing it)

Please rate | Strongly disagree | | | | | | | | | | Strongly Agree

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

5. I am PHYSICALLY able to attend Live Life Better Derbyshire sessions?

What is PHYSICAL capability?

Our physical strength, ability or skills

e.g I am physically able to drive (or have the skills to drive), I am physically able to use public transport, I am able to use a phone, tablet or computer

Please rate

Strongly disagree										Strongly Agree
0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

6. I am PSYCHOLOGICALLY able to attend Live Life Better Derbyshire sessions?

What is PSYCHOLOGICAL capability?

e.g current mood and mental health, I can plan my time so I can attend, I can remember when sessions are happening

Please rate

Strongly disagree										Strongly Agree
0	1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐