Exploring day-to-day internalised weight stigma in people with a higher weight

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I confirm that the work submitted is my own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

Introduction**:** People affected by obesity often experience weight stigma, which affects their mental and physical health. They may also experience internalised weight stigma (IWS) i.e. engage in self-blame about their weight, applying and endorsing negative weight-based stereotypes, leading to self-devaluation. Not much is known about the development of IWS. Studies suggest a relationship between external weight stigma and IWS; this study aims to investigate the relationship between these experiences, as well as shame, which may be at the emotional core of weight stigma and IWS.

Method: Over a two-week period, eight participants recorded various daily experiences of weight stigma, non weight-based stressful events, shame and IWS using brief survey data collection. Graphical representations of these experiences informed data-prompted interviews which explored these in more detail as well as other experiences of weight stigma, shame and IWS. Visual analysis was used to explore the daily survey data. Framework analysis was used to analyse the interview data.

Results: Visual analysis suggested IWS and shame scores tended to be higher in response to weight stigma, as opposed to stressful or neutral events, though analyses were not possible for all participants and differences between scores were small. Framework analysis of the qualitative data generated four themes: relationship between weight stigma, shame and IWS; development of IWS; other influences on fluctuations in IWS; and challenging IWS.

Discussion: Experiencing weight stigma may lead to momentary fluctuations in IWS, but also contributes to its development over time. Some forms of weight stigma may be more impactful and more likely to be internalised. Weight stigma experiences may shape a person's attributional style, such that non-weight based stressful events or everyday stresses may lead to fluctuations in IWS. Challenging IWS may be possible via various processes (e.g. questioning the validity of the source of weight stigma). Future research may explore interventions to help people challenge IWS.

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Glossary

Term	Definition
Bodily shame	Arising from a perceived failure to meet an aesthetic standard.
External shame	Relates to the experience of the negative evaluation of the self by another.
Internal shame	Relates to the experience of the negative evaluation of the self by the self.
Internalised weight stigma	Also IWS, or weight self-stigma. Engaging in self-blame and self-directed stigma due to weight; involves an awareness and endorsement of negative weight-based stereotypes (e.g. People with excess weight are lazy), an agreement with and application of the related attributes to self (e.g. I am lazy), leading to self-devaluation.
Global/trait shame	Also generalised shame; experience of shame is not context specific; individuals frequently or continuously feel shame or are vulnerable to experiencing shame.
Self-devaluation	Applying the three A's of self-stigma – awareness, agreement and application of the stigma to self.
Weight stigma	Experience of being devalued, derogated or ostracised in society due to the negative, prejudicial views of people with excess weight. Includes application of weight-based stereotypes, explicitly or implicitly. Encompasses a set of beliefs about people with excess weight, as well as subsequent behaviour based on such beliefs (e.g. discrimination, social rejection, prejudice).

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Introduction

Overview of obesity

In England, 64 per cent of adults are affected by excess weight (Baker, 2021) and as a result are vulnerable to a range of chronic diseases and at risk of poor mental health (Guh et al., 2009; Luppino et al., 2010). While current health guidelines suggest that fundamentally the cause of obesity is an energy imbalance between calories "in" and "out" (e.g. NICE, 2023), it is now clear that obesity is a result of a complex relationship between an individual (e.g. microbiota, genetics, pain) and their environment (e.g. eating culture, stress, shift work; Blüher, 2019; Westbury, Oyebode, van Rens & Barber, 2023; Wharton et al., 2020). However, the view that weight is wholly within a person's control appears to be the basis of weight stigma (Bednarek et al., 2023; Rubino et al., 2020).

Individuals with excess weight are often stigmatised for their weight status (Rubino et al., 2020). It is the position of the Obesity Society, WHO International Classification of Diseases, the American Medical Association, and the World Obesity Federation that obesity is a noncommunicable chronic disease (Jastreboff, Kotz, Kahan, Kelly & Heymsfield, 2018); it is the intention that this label highlights the biological and genetic basis of obesity which would help to reduce weight stigma. However, opinion is divided on whether this is helpful, with concern that a "disease" label could be disempowering for those affected, as well as leading to increased weight stigma and discrimination (Vallgårda et al., 2017). Weight stigma and how these experiences may be internalised by people with excess weight is the focus of this thesis.

While the literature draws on a broad range of terms, this study is intentional with the language used to describe these experiences and those people affected. People tend to prefer the terms "weight", "unhealthy weight" and "weight problem", rather than "fat", "obese" and "extremely obese" (Brown & Flint, 2021; Puhl, Peterson & Luedicke, 2013; Puhl, 2020). An intentional consensus statement (Rubino et al., 2020) advocates for "people-first" language such as people with obesity, although these terms are not universally accepted (Meadows & Daníelsdóttir, 2016). While this study recognises that some activist groups prefer the word "fat" (Batsis et al., 2021; National Association to Advance Fat Acceptance, 2023), this is not true for all. Therefore, this study uses terms such as "people affected by obesity" or "people affected by excess weight", and uses "weight stigma" rather than "obesity stigma".

Search strategy in literature review

The literature relating to weight stigma and internalised weight stigma is reviewed. The literature in the weight stigma field uses a range of terms to describe the negative responses towards people affected by excess weight, including, “bias”, “discrimination”, “anti-fat” or “prejudice” (Rubino et al., 2020). To identify relevant studies, terms analogous with “weight” including “obesity”, “overweight” or “fat” were searched with the terms above. Similarly, internalised weight stigma is described in alternative terms; “internalised weight bias” and “weight self-stigma”, “self-directed weight stigma”.

Overview of weight stigma

Weight stigma relates to the experience of being devalued, derogated or ostracised in society due to negative, prejudicial attitudes towards individuals with obesity (Puhl & Brownell, 2001). In their review of the evidence over 20 years ago, Puhl and Brownell (2001) found that individuals with obesity are commonly typecast in Western societies in a detrimental way; for example as lazy, less competent, sloppy and lacking willpower. They can also be perceived as unattractive, inactive, unintelligent and unhappy (Puhl & Heuer, 2009). Weight stigma encompasses not only these negative weight-based stereotypes, but also subsequent behaviour based on these beliefs, typically manifested in social rejection, prejudice, status loss and discrimination (Link & Phelan, 2001; Puhl, Andreyeva & Brownell, 2008). As a result, individuals with obesity are vulnerable to social injustice, unfair treatment and impaired quality of life (Puhl & Heuer, 2009). Moreover, rather than motivating people to lose weight, weight stigma may increase the risk of having obesity (e.g. Tomiyama et al., 2018).

A more recent review of the evidence by Rubino and various international experts suggests that in the intervening 20 years nothing much has changed (Rubino et al., 2020). Stigmatising messages about people with obesity remain and are thought to stem from the widely held belief that obesity is a choice and is a matter of personal responsibility when the reality is far more complex. The perception that obesity is a lifestyle choice may be why weight stigma is thought to be the last socially acceptable form of prejudice (Puhl & Brownell, 2001).

The majority of people affected by excess weight report having experienced some form of weight stigma (All-Party Parliamentary Group on Obesity, 2018; Puhl, Lessard, Pearl, Himmelstein & Foster, 2021). Weight stigma occurs across settings in both public and private domains, from employment, healthcare, education, to interpersonal relationships and the media (Puhl & Brownell, 2001; Puhl & Heuer, 2009; Spahlholz, Baer, König, Riedel-Heller & Luck-Sikorski, 2016). Weight stigma frequency and prevalence seem to increase with increased weight and a higher body mass index (BMI). Weight distribution is also a factor, with women who have excess abdominal weight (as opposed to on their thighs and buttocks) more likely to experience weight stigma (Krems & Bock,

2023). Weight stigma may be a gendered experience, as it is reported more by females than males (Spahlholz et al., 2016).

However, many of the studies which report on weight stigma events rely on self-report via retrospective survey methods which can be susceptible to recall bias (Ruggs, King, Hebl & Fitzsimmons, 2010; Shiffman, Stone & Hufford, 2008) and studies use different definitions and measures of weight stigma (Spahlholz et al., 2016). Additionally, these studies do not give a sense of how often people experience weight stigma in their everyday lives, tending to ask participants to report on weight stigma over their lifespan.

Ecological Momentary Assessment (EMA) and daily diary studies have asked participants to record instances of weight stigma over a time frame in their day-to-day life. In their review of these studies, Potter and colleagues (2019) reported that, across four studies, on average participants reported between 3.08 and 11.12 weight stigma events over the study periods (between seven and 14 days). However, in another study, 48 participants reported a combined total of eight episodes of stigma during a seven-day period, with most participants not reporting any stigma events at all (Potter, Meadows & Smyth, 2020). Participants in these studies had, on average, a similar weight status (BMI of 30 plus). This suggests there may be differences in reported daily experiences of weight stigma which may be due to different EMA protocols, for example participants reporting over a longer period tended to report more instances of stigma on average. Moreover, method of and language use in participant recruitment may be important; studies which reported higher instances of weight stigma recruited via obesity-related social media websites or treatment-seeking clinical samples and specified for people who self-identified as "overweight" or "obese", as opposed to non-treatment seeking individuals using more weight neutral language. This suggests that, even among individuals with a similar BMI, weight-related issues and distress vary significantly, and those that do not perceive themselves as being affected by excess weight seem to notice and report fewer instances of weight stigma. This potentially highlights the centrality of interpretation of events in some cases, and that if a person self-identifies as "overweight" or "obese" it may sensitise their interpretation of experiences.

Another factor in explaining differences between frequency of weight stigma events experienced in these EMA studies may have been whether studies acknowledged the often ambiguous or subjective nature of weight stigma and whether this is captured in the data. One study which reported higher incidences of weight stigma (Vartanian, Pinkus & Smyth, 2018) specifically encouraged participants to complete a survey after any type of obvious or ambiguous weight stigma, stating that the interpretation of weight stigma can depend on the person involved or context of the event, but emphasised that their interpretation was valid. The study that reported the lowest weight stigma (Potter et al., 2020) did not attend to the idea of ambiguous weight stigma, therefore participants may have only reported on obvious weight stigma. The differences in reporting may again point to the

influence of the subjective interpretation of events, and also suggest that there may be further differences between people in whether they interpret events as stigmatising.

Weight stigma manifests in various direct and indirect ways. Myers and Rosen (1999) created the first comprehensive list of common stigmatising experiences (the Stigmatising Situations Inventory, SSI), which included 11 categories. While there are differences in how studies or reviews have classified or assessed these experiences (e.g. Emmer, Bosnjak & Mata, 2020; Pearl, Puhl, Himmelstein, Pinto & Foster, 2020; Potter et al., 2019; Puhl & Brownell, 2006; Seacat, Dougal & Roy, 2014), broadly weight stigma can be experienced verbally (e.g. nasty or inappropriate comments from others), non-verbally (e.g. being stared at in public), behaviourally (e.g. being avoided, excluded, ignored, attacked), via public barriers (e.g. not fitting into seats), or institutionally (e.g. not being hired because of your weight).

Verbal comments such as weight-based teasing, negative and inappropriate comments from doctors and family may be the most common type of weight stigma experienced (Pearl et al., 2021; Puhl & Brownell, 2006; Seacat et al., 2014). Weight stigma may be experienced on a spectrum from direct, unambiguous physical or verbal abuse to more subtle microaggressions to ambiguous comments, behaviour or non-verbal acts open to interpretation. The SSI and other subsequent studies (e.g. Carels, Rossi, Solar & Selensky, 2017) assessed for “others making assumptions because of your weight” and “loved ones embarrassed about your weight” which in some cases could be subtle or even ambiguous experiences. Bidstrup and colleagues (2021) also argue that some items on the SSI (e.g. “being stared at in public”) may in some cases be an ambiguous form of weight stigma. This is reflected in the distinction in the literature between “felt” or “perceived” stigma versus “enacted” or “actual” stigma. However, like these authors suggest, whether the weight stigma is actual or perceived may make no difference in terms of the impact on the person experiencing this.

Gerend et al (2021) explored daily experiences of weight stigma among people affected by obesity using a qualitative approach. The study complemented quantitative findings regarding the different sources of stigma (e.g. friends, healthcare professionals, strangers), the different settings in which stigma occurs (e.g. work, home, public) and the varying types of stigma (e.g. direct offensive comments, social rejection) participants had experienced over their lifetime and in their general day-to-day life. This study adds a deeper understanding of the nuances of how weight stigma and discrimination is expressed, its intersections with other social identities, and the often-ambiguous nature of weight stigma. For example, participants questioned whether they were not being promoted at work, or sat next to on public transport, because of their weight. The findings also highlighted how participants compare themselves with others of a lower body weight, which increases the distress of their stigmatising experiences.

On a broader societal level, explicit and implicit messages and negative images about people with excess weight contribute to stigmatising weight-based stereotypes (Ata & Thompson, 2010; Pearl, Puhl & Brownell, 2012; Vartanian, Pinkus & Smyth, 2014). The media, including public health campaigns, can perpetuate the idea that weight problems and weight loss are an issue of personal responsibility and control (Couch, Fried & Komesaroff, 2018; Pearl & Schulte, 2021; Puhl, Luedicke & Lee Peterson, 2013); this message is reinforced by the diet industry who capitalise on this. Locating weight problems within the individual perpetuates stigma and moral judgement; others perceive individuals affected by obesity are responsible for their weight gain and then "fail" to take action about their weight and "choose" obesity (Cotter, Samos & Swinglehurst, 2021).

With obesity cited as a risk factor for contracting Covid-19 and a greater severity of symptoms (Public Health England, 2020; Yates, Razieh, Zaccardi, Davies & Khunti, 2020), individual responsibility was key to public health messaging, with affected individuals urged to act to "protect the NHS" (Carbone-Moane & Guise, 2021). As such, media coverage and health messages may have "reinforced and intensified anti-fat attitudes through weighty stigmatising narratives and images" (de Macêdo et al., 2022, p. 12), suggesting it is possible that people affected by excess weight may have experienced more weight stigma during the pandemic, though empirical studies are needed to evaluate this (de Macêdo et al., 2022; Pearl & Schulte, 2021).

In sum, weight-based stigma is pervasive and comes in many forms. In addition to stigmatising public health and societal messages, individuals with obesity may experience stigma at home, at work, in healthcare settings, educational settings, the media and in public (Puhl & Heuer 2009; Puhl & Brownell, 2001; Vartanian et al., 2014).

Impact of weight stigma on physical/mental health

Experiencing weight stigma has implications for physical health (Major, Tomiyama & Hunger, 2017; Papadopoulos & Brenan, 2015; Prunty, Hahn, O'Shea, Edmonds & Clark, 2022; Puhl & Heuer, 2009; Puhl & Suh, 2015; Tomiyama et al., 2018; Vartanian & Porter, 2016; Wu & Berry, 2018). As a result of experiencing stigma, individuals with obesity are more likely to avoid healthcare appointments (Alberga, Edache, Forhan & Russell-Mayhew, 2019) and exercise (Vartanian & Shaprow, 2008) which impacts on individuals' physical health. Weight stigma has itself been linked to further weight gain through behavioural, emotional and physiological pathways (Tomiyama et al., 2018); for example the impact of stigma on eating behaviour (e.g. binge eating, skipping meals; for a review see Vartanian & Porter, 2016).

Two recent meta-analyses found experiences of weight-based stigma and discrimination are associated with increased psychological distress or diminished mental health (Alimoradi et al., 2019; Emmer et al., 2020). This association is stronger with increasing BMI (Emmer et al., 2020). In sum,

these reviews suggest individuals affected are at risk of depression, anxiety, stress, lower self-esteem and social isolation due to weight stigma. There is also an increased odds of eating disorders among people experiencing weight stigma (Prunty et al., 2022).

Both reviews considered studies which explored the impact of both perceived and enacted weight stigma on psychological distress and mental health. Emmer et al (2019) grouped these two types together in the experience of "public stigma", while Alimoradi et al (2019) grouped together the two as "perceived" stigma. However, while both types of stigma seem to understandably impact individuals psychologically, there may be differences in how perceived versus enacted forms of stigma are experienced and how they affect an individual's psychological wellbeing (Lewis et al., 2011), and it is unclear what factors make individuals more vulnerable to perceiving weight stigma.

Internalised weight stigma

Aside from enacted and perceived weight stigma, a further distinction of weight stigma on an individual level is intrapersonal or internalised (Alimoradi et al., 2019; Emmer et al., 2020; Papadopoulos, de la Piedad Garcia & Brennan, 2021). Research on weight-based stigma has moved away from investigating experiences from others (external stigma) and focused on internalised weight stigma (IWS), also known as internalised weight bias or weight self-stigma (Carels et al., 2019; Pearl & Puhl, 2018). This thesis shall use the terms IWS and weight self-stigma interchangeably. Compared with the literature on external stigma, less is known about the impact of weight self-stigma on physical and psychological health though the literature in this area is growing (Pearl & Puhl, 2018). However, there is some empirical support for the theory that IWS may be more problematic for mental health than enacted weight stigma (Pearl & Puhl., 2018; Pearl et al., 2020; Prunty et al., 2022).

While a common definition of IWS has yet to be established, a current working definition is that it occurs when individuals engage in self-blame and self-directed stigma because of their weight (Rubino et al., 2020). It is not just a set of beliefs which indicate an awareness or endorsement of negative weight-based stereotypes, but also an agreement with and application of these attributes to the self, leading to a process of self-devaluation (Corrigan, Larson & Rüsch, 2009; Davidsen, Pico, Sandøe & Lund, 2023; Meadows, 2017; Rubino et al., 2020). Self-devaluation is described as the "three As" of self-stigma – awareness, agreement and application (Corrigan et al., 2009). However, more than this, weight self-stigma is likely a multidimensional construct which involves experiences of shame, self-devaluation and other thoughts and feelings about the experience of living with excess weight in a fat phobic society, which includes the knowledge of belonging to a stigmatised group (Meadows & Higgs, 2019; Palmeira, Pinto-Gouveia & Cunha, 2016). See "Glossary" for a definition of IWS and other constructs used throughout this thesis.

The definitional issue of IWS stems from questions about its measurement as it is debated whether there exists a sufficient measure of IWS. There are two key measures used in the IWS research; the Weight Self-Stigma Questionnaire (WSSQ; Lillis, Luoma, Levin & Hayes, 2010) which includes sub-scales of self-devaluation and fear of enacted stigma; and the Weight Bias Internalisation Scale (WBIS; Durso & Latner, 2008). In their review, Stewart and Ogden (2021a) reported the conceptualisation of IWS in both measures fit with the conceptualisations in the literature. However, others argue that a sufficiently multidimensional measure of weight self-stigma is lacking and query how it is distinct from other related constructs (Austen, Pearl & Griffiths, 2021; Meadows & Higgs, 2020). For example, Meadows and Higgs (2020) argue that as the WBIS measure is highly correlated with measures of body image and self-esteem, that these three related constructs may be better described as “trait self-judgement”. In support of this, a meta-analysis of associations between IWS and conceptually-related constructs found evidence of considerable overlap between IWS, body image and self-esteem/self-worth (Romano et al, 2022). Austen and colleagues (2021) further raise concerns about a lack of conceptual clarity. They highlight the use of interchangeable terms in the literature (e.g. weight self-stigma, internalised weight stigma, weight bias internalisation) which are often defined inconsistently, leading to varied operationalisations (i.e. self-report measures) of IWS, and suggest a Delphi study may establish a consensus in the field. Finally, other reviews of the weight stigma measures also suggest that there is not a sufficient enough distinction between enacted, perceived and internalised weight stigma (Bidstrup et al., 2021; Papadopolous et al., 2021), though this distinction is understood empirically. Challenges with these measures may mean it is hard to better understand IWS.

In light of this, Meadows and Higgs proposed a revised version of WBIS (Durso & Latner, 2008) which consisted of two sub-scales: weight-related distress and weight-related self-devaluation (Meadows & Higgs, 2019). In a qualitative study, Davidsen et al (2023) explored how weight-related distress and self-devaluation, and potentially other facets of IWS, played out in the everyday lives of people affected by excess weight. Potential key dimensions of IWS were present in the themes of beauty ideals, self-blame, ambivalence, anticipated discrimination, coping strategies and mental well-being; aspects which are arguably not currently all captured in a measure of IWS.

Finally, it is unclear whether IWS is a trait or state-like construct, or has a dual state-trait nature similar to personality characteristics (Zuroff, Sadikaj, Kelly & Leybman, 2016). The majority of EMA studies have typically measured IWS at baseline as if it is a stable, trait-like construct rather than a momentary potentially changing variable (see Appendix A for variables measured in EMA weight stigma studies). Yet, pilot intervention studies have reduced IWS which suggests it may be a malleable construct (Levin, Potts, Haeger & Lillis, 2018; Palmeira et al., 2016; Pearl et al., 2018).

Development of internalised weight stigma

People with diverse body weights report experiencing IWS (Puhl, Himmelstein & Quinn, 2018), but it is reported to be highest among people with obesity (Pearl et al., 2019; Puhl et al., 2018). However, not all individuals with obesity have high levels of IWS. Understanding who is at risk for high IWS and who may benefit from clinical support to prevent internalisation of weight-based stigma may reduce psychological distress and unhelpful weight behaviours (Puhl et al., 2018). Thus, investigating the risk factors/vulnerabilities for IWS as a response to events as well as protective factors would contribute to such interventions.

However, not much is known about the factors contributing to the development of IWS (Gmeiner & Warschburger, 2020; Stewart & Ogden, 2021a). Studies suggest a relationship between external weight stigma and IWS: individuals with a history of more frequent lifetime experiences of weight stigma are more likely to have higher IWS (Carels et al., 2017; Pearl et al., 2018; Pearl et al., 2019; Puhl et al., 2018). In a cross-sectional study with a weight-loss intervention sample, participants completed two measures of IWS as well as reporting on experiences of weight stigma (Pearl et al., 2019). Across analyses with both measures, experiences of weight stigma were associated with higher levels of IWS. Recent experiences of weight stigma which were reported as more distressing were also associated with higher IWS. This points to a potential temporal relationship between experiencing stigma, distress and IWS. However, given the study design causality cannot be established, and it is unclear how long the impact of the external stigma on distress and IWS lasts or how individuals cope with these experiences.

Individuals who are affected by excess weight as children or young adults are more likely to experience IWS as adults (Pearl et al., 2019). Like adults, children and adolescents with excess weight experience weight stigma from various sources (family, friends, peers, educators, healthcare professionals, the media; Haaq, Kebbe, Tan, Manco & Salas, 2021; Palad, Yarlagadda & Stanford, 2019); but these stigmatising experiences may be more impactful in these formative years (Butt, Harvey, Khesroh, Rigby & Paul, 2023; Puhl et al., 2021) as children look to the adults in their life to understand themselves and the world (Gmeiner & Warschburger, 2020). In a qualitative study with women with excess weight, participants recalled experiences of weight stigma as children (e.g. not fitting into desks at school, offensive comments from teachers) as shaping the way they saw themselves and their bodies (Pila, Solomon-Krakus, Egelton & Sabiston, 2018), which may be related to the development of IWS. In a longitudinal study with six to 11 year olds, experiences of weight-related teasing predicted higher IWS (Gmeiner & Warschburger, 2020), pointing to the relationship between weight stigma and IWS starting from an early age, which may then continue into adulthood.

The source of weight stigma may also be a factor for IWS; some studies have found that individuals who experience weight stigma from a greater number of family members have a higher IWS

(Lawrence et al., 2023; Pearl et al., 2018) with individuals reflecting on these experiences as contributing to their weight self-stigma (Lawrence, Puhl, Schwartz, Watson & Foster, 2022). On the other hand, some individuals may not experience external stigma from a loved one but be more susceptible to internalising weight-based attitudes via other means (e.g. media; Pearl & Puhl, 2018).

Experiencing adverse childhood events (ACEs) may also be a risk factor in the development of IWS: women with overweight or obesity who had experienced more ACEs were more likely to internalise weight stigma (Keirns et al., 2021). This may be because experiencing ACEs (particularly childhood abuse), may mean individuals are more likely to develop attentional biases for threatening information, including weight stigma. Weight stigma experiences may then be internalised as people who experience ACEs are also more likely to experience shame and self-criticism (Sachs-Ericsson, Verona, Joiner & Preacher, 2006; Wojcik, Cox & Kealy, 2019), which may generalise to experiencing shame and self-devaluation related to their weight, as captured by weight self-stigma measures. Therefore, a tendency towards self-critical thinking and shame may be potential factors which are key to understanding the internalisation of weight stigma.

Social exposure to different body sizes at a population level and a personal level may also influence the development of IWS (Stewart & Ogden, 2021b). This may be via different mechanisms such as the "normalisation" of different body sizes, social comparison in relation to others of different body weights, beliefs about the controllability of body weight, the impact of friends and family and the role of the media (Carels et al., 2009; Nutter, Russell-Mayhew & Saunders, 2021; Stewart & Ogden, 2021b). Weight self-stigma may also be influenced by people's beliefs about what is considered to be attractive and the extent to which they have internalised the Western societal message "thin is the ideal". Stewart and Ogden (2021b) found that higher IWS was predicted by the belief that thinner body types were more attractive, but only in those with a higher body weight. This supports the idea that higher IWS may develop from a perceived difference between a person's ideal body size and their current body weight. Studies have also highlighted the role of social media in promoting certain idealised body types (Clark et al., 2021; Sharp & Gerrard, 2022).

In a qualitative study, Ueland and colleagues (2019) also discussed the role of society's judgement of people with excess weight in influencing IWS. Participants affected by obesity reported feeling judged not only for their bodies but also what they ate, with a perception they were "constantly observed and devalued". This seemed to lead to feelings of "self-hatred, shame and guilt, as they felt less worthy than others" (Ueland, Furnes, Dysvik & Rørtveit, 2019, pp. 5–6). As they could not separate themselves from society, they could not protect themselves from these feelings, so instead these feelings were internalised, which led to self-judgement: "they looked on themselves with the eyes of society, as if they had adopted the voice of society" (Ueland et al., 2019, p. 6).

A further factor which may contribute to the development of IWS may be how people cope with weight stigma. Pudney and colleagues (2020) used a mixed methods design to triangulate qualitative and quantitative data to explore participants' reactions to historical weight stigma. Additionally, the participants indicated whether they were "still distressed" or "no longer distressed" about these experiences. Those who were no longer distressed were more self-accepting, not concerned about others' judgements of them, and valued health over appearance. Those who were still distressed regarded their weight and their experiences of weight stigma as being central in influencing their perception of themselves, engaged in self-blame for experiencing the consequence of weight stigma, and ruminated on their memories of weight stigma. Those participants still distressed reported greater IWS and perceived stress, and poorer mental health than no longer distressed participants.

In sum, individuals who experience weight stigma appear to be more vulnerable to experiencing IWS. Furthermore, societal messages about body weight may also be a factor. However, the psychological mechanisms by which experiencing weight stigma leads to IWS are unclear. A greater understanding of why or how individuals who experience more weight stigma internalise stigma could provide a basis for developing effective support for those affected. Moreover, it may be that those who experience weight stigma in their everyday life then experience a fluctuation in their experience of IWS.

Demographic variables related to internalised weight stigma

Pearl et al (2019) examined demographic variables in relation to IWS in an attempt to develop a "phenotype" of individuals who internalise weight stigma in the USA. Across two IWS measures, higher IWS was associated with being female, of a younger age, a higher BMI and an onset of weight stigma in childhood and young adulthood; these are supported in other studies (Puhl et al., 2018; Pearl et al., 2018). Moreover, participants who had a romantic partner or were widowed reported lower levels of IWS; conversely those who were divorced, separated or never married tended towards elevated IWS. The authors point to social support as a possible protective factor. However, these associations may also suggest IWS as a barrier to receiving care or affection from a romantic partner.

Lower IWS is reported in Black (compared with White) participants (Himmelstein, Puhl & Quinn, 2017; Pearl et al., 2018; Pearl et al., 2019; Puhl et al., 2018), which suggests there may be cultural differences in how IWS is experienced and may further raise queries about IWS measures. Alternatively it may be that weight self-stigma is experienced less among different ethnicities. Lower IWS is also associated with higher levels of education and income (Puhl et al., 2018; Pearl et al., 2019). This may also be related to findings that advancing educational status is associated with fewer reports of interpersonal weight stigma (Seacat et al., 2014).

Regarding levels of education and income, there may be a compounding impact of stigma from other sources (i.e. individuals may experience shame and stigma due to being from a lower socioeconomic background; Zavaleta, Samuel & Mills, 2014). While these studies used American samples, this trend may also be seen in the UK. A recent government report found that the prevalence of those affected by excess weight is nine percent higher in the most deprived areas (Baker, 2021). Moreover, 71 per cent of those affected by excess weight are considered to have a disability. Similarly, other marginalised identities (e.g. based on sexual orientation, age, gender) may also be intersectional factors related to experiencing increased weight stigma (Panza, Olson, Goldstein, Selby & Lillis, 2020; Public Health England, 2020). Thus, it may be that for some individuals affected by obesity, their experience of stigma may be related to their status of belonging to various stigmatised groups; this may in turn increase their vulnerability to IWS.

Outcomes of internalised weight stigma

At present, evidence suggests the psychological outcomes may be worse for those who not only experience stigma but also internalise weight stigma (Emmer et al., 2020; Himmelstein, Puhl, Pearl, Pinto & Foster, 2020; Papadopoulos & Brennan, 2015; Pearl et al., 2020; Pearl, Puhl & Dovidio, 2015; Vartanian & Novak, 2011). A systematic review by Pearl and Puhl (2018) found experiencing IWS has been linked to a wide range of poor health outcomes, including mood difficulties, psychological distress, worse body image, lower self-esteem, poorer health-related quality of life, metabolic dysfunction, disordered eating, avoidance of exercise, and social isolation and experiential avoidance**.** Overall, IWS is significantly and positively correlated with depression and anxiety symptoms; the review found this to be true for individuals with diverse body weights. This has been supported by two further meta-analyses which found a medium effect size or moderate association between weight self-stigma and poorer mental health (Alimoradi et al, 2019; Emmer et al., 2020). Taken together, these reviews highlight the pervasiveness of IWS and its psychological impact across society, as well as its relationships with adverse health behaviours.

IWS may be a potential mediator between stigma experiences and unhelpful eating behaviours, negative body image and psychological distress (Bidstrup et al., 2021; Romano, Heron & Henson, 2021; Vartanian & Porter, 2016). Individuals with obesity who internalise weight-based stereotypes may be more vulnerable to the negative impact of stigma experiences; previous research suggests these individuals are more likely to binge eat and less likely to diet in response (Puhl, Moss-Racusin & Schwartz, 2007). For individuals in weight loss programmes, Mensinger and colleagues (2016) found individuals with higher IWS reported no change in disordered eating. In a cross-sectional study with a community sample of individuals with diverse body weights, O'Brien et al (2016) found weight stigma was associated with greater IWS, which was associated with greater psychological distress which was in turn associated with greater unhelpful eating behaviours (e.g. emotional eating).

These studies point to the impact of IWS on eating behaviours, that eating is associated with a way of coping with distress and the potential long-term physical health effects of IWS.

In a recent systematic review, Bidstrup and colleagues (2021) assessed the mediating role of IWS on the relationship between weight stigma and biopsychosocial outcomes, including disordered eating, exercise behaviour and body shame. There was consistent evidence for IWS mediating the relationship between weight stigma and disordered eating outcomes, with preliminary evidence of its mediating role between weight stigma and body shame, body dissatisfaction, exercise behaviour, healthcare experiences and behaviours, bodily pain and parental weight talk. This review highlights the potential wide-reaching impact of weight stigma and IWS, and points to interventions addressing IWS to improve health outcomes.

Current models of internalised weight stigma

Tylka's model posits weight stigma leads to IWS (Tylka et al., 2014). While useful, this descriptive model is based on a summary of the evidence rather than offering a theoretical understanding of why this occurs. On the other hand, Ratcliffe and Ellison's formulation model of internalised weight stigma (2015) proposes that external factors (i.e. weight stigma in a social, political and interpersonal context) increases a person's vulnerability to IWS. Central in the model is the "processing of self as a stigmatised individual". The authors translate cognitive behavioural models of social anxiety and low self-esteem to hypothesise how external weight stigma and external judgement may become internalised weight stigma and self-judgement. Key to this process is downward social comparisons; individuals with obesity are aware of having a highly visible, socially undesirable characteristic. It may be that experiencing weight stigma serves to remind individuals of this. This awareness of being in a socially devalued group leads to devaluations of self. These comparisons may lead to feelings of being judged as inferior and inadequate, which in turn gives rise to shame and low self-esteem.

However, while this model convincingly argues that external stigma experiences increase susceptibility to IWS, this is proposed in a general all-encompassing way rather than examining the effect of each stigmatising experience and how this may lead to IWS. Moreover it does not consider source or timing of weight stigma for example whether experiences of weight stigma early in life may be more likely to make someone more vulnerable to IWS, or whether weight stigma from particular sources (e.g. family members) are more likely to lead to IWS. Empirical support for a number of ideas within the model, including the associations with feelings of shame, is also needed.

Shame and IWS

Shame may be experienced if the global self is scrutinised and negatively evaluated (Lewis, 1971) and may be the "emotional core of stigma" (Luoma & Platt, 2015). Fluctuations in both internal and external weight stigma experiences are associated with high negative affect and/or low positive affect (Carels et al., 2017; Carels et al., 2019; Vartanian et al., 2018); shame is often captured in the negative affect measures. As discussed on page 18, definitions of IWS suggest it to be a multidimensional construct which includes experiences of shame (Meadows & Higgs, 2019; Palmeira et al., 2016).

Moreover, shame is likely a complex, multifaceted emotion (Andrews, Qian & Valentine, 2002); it may be situation specific (state shame), or people may be "shame-prone" meaning they frequently or continuously experience shame (trait shame). The shame literature describes various triggers for shame; of import to this topic, people may experience bodily shame if they perceive themselves as not meeting standards of body ideals relating to weight, figure, face, personal hygiene and clothing (Andrews et al., 2002; Scheel et al., 2014). Individuals with excess weight experience high levels of body-shame (Conradt et al., 2007).

Weight self-stigma may mediate the relationship between the perception of having a higher weight and self-conscious emotions, such as body-related shame and guilt (Lucibello, Nesbitt, Solomon-Krakus & Sabiston, 2021), and the relationship between weight stigma and body-related shame such that more frequent experiences of weight stigma are associated with higher IWS and body-related shame (Forbes & Donovan, 2019).

Global shame (or trait shame) is theorised to be associated with more detrimental outcomes than body-related shame (Braun et al., 2021; Gilbert, 2002). While preliminary studies indicate trait shame to be higher in people seeking bariatric treatment than non-clinical samples (e.g. Økland Lier, Biringer & Bjørkvik, 2012) studies are sparse and to date no studies found have measured trait shame in a community sample affected by excess weight nor measured IWS alongside global shame.

Ueland (2020) used a qualitative approach to explore correlations between shame and stigma and their impact on people affected by obesity. She found three perspectives on how stigmatisation and shame were created and maintained: pressure from society, offensive behaviour from others, and self-devaluation. A key finding was that participants were aware of their devalued status in society. They were constantly exposed to these views in society and in the health service, as well as reflected in verbal and non-verbal communication from others; Ueland concluded this led to shame and IWS. IWS manifested as participants applying typical negative stereotypes to themselves: that people affected by obesity are "stupid, less gifted, unsuccessful, failures" (Ueland, 2020, p. 10). Thus, participants with IWS viewed themselves as having a devalued social identity (Ueland, 2020).

Shame may also intensify people's internal responses to, or shape their interpretations of, subtle experiences of weight stigma. A further qualitative study explored participants' perceptions of and reactions to daily experiences of weight stigma (Lewis et al., 2011). Participants reported different examples of direct, environmental and indirect stigma. Indirect stigma experiences (e.g. being stared at) were the most commonly reported, but due to their covert nature were more open to interpretation and harder to challenge. These subtle experiences of stigma were made worse by participants' own sense of self-blame and shame, which influenced how these experiences were interpreted. Participants were often critical of themselves and their reactions to the stigma, or felt deserving of the perceived negative judgement.

Internalised weight stigma, shame and Gilbert's model of shame

According to Gilbert's model of shame, external shame relates to thoughts and feelings about how one is thought to exist in the minds of others. This is experienced if we believe that others view us negatively and/or we believe that we have unattractive characteristics, which make us vulnerable to attack or rejection (Gilbert, 1998a). Internal shame is where there is identification with the mind of the other (i.e. the self is both judge and judged; de Matos, 2018) and we believe ourselves to be inadequate, flawed or bad (Gilbert, 1998a).

The model proposes internal shaming and self-devaluation as a form of coping with external shame. This is seen as adaptive to ensure group membership which aids survival. Despite being painful, internal shaming is believed to be an evolutionary submissive response to external shaming and stigma. It is a form of conforming and self-protection as defending oneself may cause conflict; it is safer to judge and blame the self rather than challenge others who may be more socially powerful or may retaliate and cause harm (Gilbert, 2002).

Gilbert's evolutionary and biopsychosocial shame model (2002) may be used to generate hypotheses about the relationship between external weight stigma and IWS. At the heart of the model is the experience of stigma and how individuals may respond to stigma experiences. Given the model's theory about the evolutionary function of shame, the model proposes weight stigma would prompt a shame response. The model may elucidate the mechanisms or processes by which external weight stigma (giving rise to external shame) is then internalised to weight self-stigma (which manifests as self-criticism, or internal shaming, as a defence to external shame). Thus, IWS, with its association with shame and self-devaluation, may be a form of internal shaming in response to external weight stigma. See conceptual model (Appendix B) which presents a theory of how IWS may fit into Gilbert's shame model (2002).

Other external factors, besides weight-based stigma, may also trigger the shame response. Gilbert's three systems model (2014) proposes we have three motivational systems. The drive system which

motivates towards achieving and gaining resources; the threat-protection system which is associated with detecting threat and protecting the self; and the soothe system which manages distress and promotes bonding. Gilbert suggests that those who engage in self-criticism and experience shame are operating from their threat-protection system (Gilbert, 2014); they likely have an overdeveloped threat system and underdeveloped soothe system.

Experiencing weight-based stigma may be experienced as a social threat (Dickerson, Grunewalk & Kemeny, 2004; Dickerson, 2008; Gilbert & Proctor, 2006). Stressful life events such as divorce, losing your job, personal injury or illness may also be experienced as a social threat as these may threaten someone's social status and leave someone at risk of negative evaluation from others (Dickerson et al., 2004; Dickerson, 2008). Daily stress may also come in the form of "everyday hassles" (DeLongis, Folkman & Lazarus, 1988); these include workload, housework or misplacing or losing things. Such events would therefore cause a person to act from their threat system, which according to Gilbert, may increase a person's vulnerability to self-criticism; this may manifest in individuals affected by obesity as IWS.

Overall summary

Weight stigma and IWS are experienced by the majority of people affected by obesity (Puhl et al., 2018; Puhl et al., 2021), and both types of stigma can impact on physical and mental health. While not much is known about the development of IWS, cross-sectional studies point to a relationship between individuals' experiences of weight stigma and their IWS, which is supported by models of IWS.

However, the processes by which a person may internalise weight stigma after experiencing weight stigma are unknown. Moreover, it is unclear whether IWS may be a constant or fluctuating experience (or state or trait construct, or both), and whether daily experiences of weight stigma (or other external experiences, e.g. everyday stresses) may affect IWS. According to Gilbert's shame model, people who experience weight stigma may be affected by external shame, which may be defended against via internal shaming processes (e.g. self-devaluation). In individuals affected by excess weight, internal shaming and self-devaluation may manifest as IWS.

Rationale for current study

This study investigates the relationship between external weight stigma, shame and internalised weight stigma using a U.K. sample. Applying Gilbert's model and previous literature, experiencing weight stigma would be associated with experiencing shame. A relationship between external weight stigma and IWS would fit with Gilbert's assertion (2002) that self-devaluation, a form of internal shaming, is a defence to stigma and external shame. In line with a previous EMA study (Carels et al., 2017), external stigma is defined broadly as something that makes an individual feel bad about their

weight (e.g. interpersonal stigma, institutional stigma, public barriers, media or public health messages). This is emphasised in order to capture perceived or felt stigma. The study also investigates IWS and external shame in relation to other external events i.e. non-weight based stressful events or neither stressful nor weight stigma events, termed “neutral events”. Finally, the study will also explore other factors which may influence the relationship between weight stigma and IWS.

Quantitative designs which must reduce complex psychological concepts to brief descriptions with limited responses cannot capture details about how weight stigma, shame and IWS are expressed or experienced (Gerend et al., 2021). Qualitative methods are able to provide a richer description and understanding of the everyday lived experience of weight stigma, shame and IWS for people affected by excess weight, and may provide clues into the psychological mechanisms by which external weight stigma can become internalised as well as any variables that may influence the relationship between weight stigma and IWS (Gerend et al., 2021).

One means of encouraging narratives in qualitative interviews is through prior collection of personal ecological data (such as EMA data) on which to reflect and prompt; these are known as data-prompted interviews (DPIs; Kwasnicka, Dombrowski, White & Sniehotta, 2015). To date, no qualitative studies on weight stigma or IWS have used DPIs. Furthermore, no studies have explored both the experiences of daily weight stigma and internalised weight stigma using a qualitative approach. Therefore, both EMA (termed “daily survey data” henceforth for clarity) and interview data are used to explore the experiences of shame and IWS in response to external weight stigma, and to non-weight based events, as well as investigating other factors which may affect the relationship between weight stigma and IWS.

Research question

How do people with obesity experience internalised weight stigma and shame in relation to external weight stigma?

Method

Design

Consultation with Patient and Public Involvement (PPI) informed the design and development of the project via two meetings and written feedback on study resources. PPI consultants were two females with lived experience of excess weight who were recruited through the Obesity Empowerment Network.

This mixed methods study was derived from a planned EMA project for which analysis was not possible due to sample size constraints (see Appendix C). The current study combined visual analysis of momentary quantitative survey data with qualitative analysis of transcripts from participants taking part in data-prompted interviews.

The protocol used to collect the daily survey data was from an EMA weight stigma study (Carels et al., 2017). This used a mix of event contingent recording (participants were asked to complete a survey after experiencing weight stigma) and random sampling (participants complete the survey when prompted at two random intervals between 9 a.m. and 7 p.m.) over a two-week period. This protocol captures "in the moment" responses to events of interest and was intended to achieve a trade-off between a sufficient period of data collection and participant burden (see Appendix A for other EMA designs used in weight stigma studies). This method of data collection may be particularly useful for capturing subtle, or less impactful instances of weight stigma which may be harder to recall, as well as capturing how people feel in the moment. These data were collected along with quantitative baseline data, and one exit questionnaire (see Appendix D for results) which were part of the intended EMA study.

The qualitative data were collected using DPIs. DPIs use personal, real-world data previously provided by a participant to guide discussion during the interview (Kwasnicka et al., 2015). Therefore, the interviews provided an opportunity to ask participants about their responses during the survey period, provide a richer narrative of events, explore the meaning of the data and understand any data patterns (Kwasnicka et al., 2015). It also provided a means to understand and explore participants' wider experiences with weight stigma beyond the survey period, for example, historical or impactful weight stigma events.

In summary, along with the quantitative data from the baseline and exit questionnaires collected from the larger EMA study, the final design uses both quantitative and qualitative data to understand the daily experiences of external weight stigma, IWS and shame of the eight participants.

The quantitative data collected during the two-week survey period are presented in the results section as descriptive context for the sample and in the form of graphs for visual analysis of the relationships between the measure of interest for the interviewed participants. Focusing on these eight participants allows for context to be provided regarding their experience (due to the presence of the interview data) and is a manageable number for visual analysis of quantitative data. This was considered the most appropriate use of the collected data.

Ontology and epistemology

Quantitative approaches are associated with a positivist paradigm, while qualitative approaches are associated with the interpretivist paradigm; both are based on different ontological and epistemological positions (McEvoy & Richards, 2006; Ritchie & Lewis, 2003). In brief, positivism posits that reality may be objectively observed and measured by the researcher, and that what is being observed is independent of and unaffected by the researcher, while interpretivism posits that the researcher and their environment interact with each other, and therefore what is observed is subjective and depends upon the researcher’s perspective and values (Ritchie & Lewis, 2003). The pragmatic position is that both approaches hold value, can complement each other, and that whichever methodology is used depends upon the research question (Johnstone, 2004; McEvoy & Richards, 2006; Ritchie & Lewis, 2003). However, some argue that as these methodologies have different ontological and epistemological perspectives they are based on contradictory assumptions, meaning they are incompatible (McEvoy & Richards, 2006), and may produce results which are challenging to reconcile (Johnstone, 2004).

An alternative philosophical stance to positivism and interpretivism is offered by critical realism (McEvoy & Richards, 2003; 2006). It acknowledges that there is a tangible reality, but we are limited in our understanding of it as our perceptions of it are socially constructed, and we may only get an empirical understanding of those aspects which are accessible (McEvoy & Richards, 2006). It emphasises that events take place within a dynamic context, and that observations are influenced by previous theoretical knowledge. It believes it is not possible to directly observe causal mechanisms but rather they are inferred though considering both empirical observations and theoretical ideas (McEvoy & Richards, 2003; 2006). Critical realists employ both quantitative and qualitative approaches, but may offer some benefits over pragmatism as it is only based on one set of epistemological and ontological assumptions (McEvoy & Richards, 2003).

Therefore, given the mixed methods design, the lead researcher took a critical realist position with the data, using relevant theory and a priori knowledge to guide interpretation of the data. This study

collected both quantitative (e.g. the daily surveys) and qualitative data (i.e. the interviews) and used analytical techniques from both approaches.

Recruitment

PPI consultants suggested that individuals most likely affected by weight stigma and IWS would be those who have a higher BMI and would likely fall in the "obesity" range (BMI≥30), which informed the inclusion criteria. The full inclusion criteria required participants to (a) be aged 18 years and above; (b) have a Body Mass Index (BMI) ≥ 30; (c) live in the UK; (d) own a smartphone and be able to download an app; (e) be fluent in written English; (f) able to access study resources via smartphone and/or laptop. To protect vulnerable individuals affected by obesity, exclusion criteria were specified see Table 1.

PPI consultants also suggested that those who are in a commercial weight management group may receive support which buffers any reporting of stigma; this is also indicated in some of the literature (e.g. Carels et al., 2017). In order not to constrain the sample size, it was decided not to state this in the exclusion criteria. However, participants were asked to report whether they were actively engaged in weight loss. This was originally for consideration in the data analysis but also provides description about the sample.

Table 1

Inclusion/exclusion Criteria

Inclusion criteria	Exclusion criteria
Aged 18 years plus	Have a previous/current diagnosis of an eating disorder
BMI≥30	Have a diagnosis of a mental health problem for which you have been hospitalised in the past 3 months
Live anywhere in the UK	Are pregnant or nursing
Own a smartphone and be able to download an app	
Be fluent in written English	
Able to access study resources via smartphone and/or laptop	

A sample of individuals affected by obesity was recruited from the community via various social media channels (e.g. Twitter), websites and obesity charities (e.g. Obesity Empowerment Network).

Recruitment also involved tier two weight management services, which are commissioned by local councils to support individuals with a BMI ≥ 30 to make lifestyle changes towards weight loss (Public Health England, 2017). Two of these services consented to sharing the advertisement with their clients.

A recruitment advertisement, which was reviewed by PPI members, was shared via these various channels (for advertisement, see Appendix E).

Procedure

The recruitment advertisement directed prospective participants to an Online Surveys link, where they were presented with the inclusion/exclusion criteria for self-screening. Following this, participants were presented with the Participant Information Sheet (Appendix F) and invited to consent to participate by typing their name and providing their email address (Appendix G). Participants then had the option to follow a new Online Surveys link to complete the baseline questionnaires (Appendix H) or wait to be contacted by the lead researcher with prompts to complete the baseline questionnaires.

After consenting to take part and completing the baseline questionnaires, participants were then offered a welcome call with the lead researcher to verify screening, orientate participants to the study and complete the demographics questionnaire (Appendix I). They were sent instructions on how to take part in the study and download the application (app; for instructions see Appendix J); this information was reviewed in the welcome call. Alternatively, some participants chose to set themselves up on the app independently and completed a demographics questionnaire via an Online Surveys link. Once they had downloaded the app, from the following day, the app started to prompt participants to complete two daily surveys a day for a two-week period.

Over the two-week period, participants were asked to self-initiate a survey if either they experienced a weight-based stigma event or they experienced a stressful event. Additionally they completed the survey twice a day at random intervals (between 9 a.m. and 7 p.m.). The number of prompts was subject to PPI review and is in line with the protocol of Carels et al. (2017). The prompts were at randomised intervals as weight stigma occurs across settings and could occur at any time of the day. The survey consisted of four questions which asked about participants' experience of weight-based stigma, stressful events, external shame and internalised weight stigma (see Appendix K). Participants were asked to specify if and which type of weight stigma they may have experienced; and if they had experienced a general stressful event (neutral to weight). Participants then rated how much they agreed with statements in that moment, on a scale of one to five (1 = *completely disagree* to 5 = *completely agree*). The survey was completed via the participants' smartphone on an app (Ethica Data).

Following completion of the survey collection period, participants were prompted to complete the exit survey and were provided with a written debrief (see Appendix L); there was also an option for verbal debrief if required by the participant (none were requested).

Participants that completed the baseline questionnaires, exit survey and a minimum amount of 40 per cent of the daily surveys, were emailed a £10 online shopping voucher. This email also asked if they were interested in taking part in the interviews of the study (see Appendix M). Those interested were sent an Online Surveys link with a new Participant Information Sheet and consent form to complete (see Appendix N). Participants who provided their consent were then contacted via email to arrange a videocall via Zoom to complete the interviews.

Before each interview, an individualised interview schedule was prepared (for an example, see Appendix O). This consisted of the same questions for each participant, with amendments made according to their personal collected data during the survey period. This included number and types of weight stigma events recorded and with a graph reflecting their answers during the survey period.

The interviews took place online and lasted approximately 60 minutes. All interviews were recorded and transcribed by Zoom software, with an extra recording made using an encrypted recording device. Transcripts were reviewed along with the audio and edited for accuracy. Participants were interviewed by the lead researcher, who is a White female with a BMI in the “healthy” range.

Participants who completed the interview were sent an additional £10 online shopping voucher.

Data collection took place between August 2021 and January 2022. This was a transitionary period for Covid-19, meaning activity and social interaction was still affected during this time.

A PPI consultant raised concerns about prospective participants believing they would be able to receive a form of support or intervention as a result of participating in the study. Therefore, the Patient Information Sheet made clear that this was not involved in this study. They also raised a concern about the psychological safety of participants and how the lead researcher could manage this. To address this, the potential for distress was made clear in the Patient Information Sheet when considering informed consent, with signposting and verbal and written debriefing procedures in place during and at the end of the study. Signposting was comprehensive and based on information collected by the lead researcher about how people may refer themselves and the support on offer. Additionally, the lead researcher contacted authors of similar studies which routinely asked about the experiences of weight-stigma and IWS to assess the risk to participants. This risk was deemed to be low.

Measures

Measures consisted of self-reported measures administered at baseline, the daily surveys during the two-week survey period, and upon completion of the survey period, one exit questionnaire. The baseline and exit measures were part of the intended EMA study. These are outlined in Appendix D and H.

Demographic information was collected (participants' gender, age, age of onset when affected by higher weight, current BMI, level of education, civil status, ethnicity) and current engagement in a weight-management intervention. These demographic factors are based on previous research into IWS and stigma reporting (Carels et al., 2017; Pearl et al., 2019) and informed the description of the sample. Participants were also asked if they were shielding or restricting face-to-face contact due to the pandemic. This information was collected during the welcome call, or via Online Surveys.

The External and Internal Shame Scale (EISS; Ferreira, Moura-Ramos, Matos & Galhardo, 2020) is an eight-item single measure to assess both external and internal facets of shame. The items consider four core domains related to shame (Inferiority/ Inadequacy, Exclusion, Emptiness and Criticism), which were drawn from the shame literature and clinical experience. The EISS total scale, external and internal subscale have acceptable reliability ($\alpha = .89$, $\alpha = .80$ $\alpha = .82$ respectively). Items are rated from 0 (*never*) to 4 (*always*). A score was calculated by summing all these items (maximum: 32). As there are no clinical cut-offs, to provide context as to how participants scored in relation to each other, the sum total score was dichotomised. Therefore, participants who scored 0 to 16 were categorised as having "low" shame, and participants who scored 16.1 to 32 were categorised as having "high" shame. This scale was used at baseline as it is brief, and because it was possible to use the external shame sub-scale items in the daily surveys.

The Weight Self-Stigma Questionnaire (WSSQ; Lillis et al., 2010) is a measure of IWS. It consists of 12 items, divided into the two subscales of fear of enacted stigma and self-devaluation (six items each). Fear of enacted stigma items assess perceived and anticipated stigma from others (e.g., "Others will think I lack self-control because of my weight problems"), and self-devaluation items assess negative self-perceptions and self-blame due to weight (e.g., "I became overweight because I'm a weak person"). Items are rated from 1 = *completely disagree* to 5 = *completely agree* and summed; higher scores indicating greater IWS. The internal consistency of the total scale and each subscale was good ($\alpha = 0.89$, 0.88 and 0.81, respectively). No cut-offs have been established for WSSQ scores. A sum total score is calculated (maximum: 60), with higher values indicating higher levels of IWS. As there are no cut-offs, to provide context, participants who scored 1 to 30 were categorised as having "low" IWS, and participants who scored 31 to 60 were categorised as having "high" IWS. This scale is frequently used in weight stigma research (Austen et al., 2021), and offered an advantage over the other widely used WBIS (Durso & Latner, 2008) in that it comprised of two sub-scales. One of the

sub-scales, self-devaluation, mapped onto the conceptualised model (Appendix B) and was used in the daily surveys. The WSSQ was administered at baseline and upon completion of the survey period as an exit questionnaire. This was to assess if there had been any change to participants' WSSQ score as a result of taking part in the daily surveys and the increased self and environmental monitoring of external and internal weight stigma.

Daily surveys (administered via Ethica Data app)

The daily survey was designed to measure weight stigma, stressful events, shame and IWS. There were three versions of the survey depending on whether it was a self-initiated survey following a weight stigma event, stressful event, or a prompted survey. These were substantively all the same, with minor modifications to reflect the context in which the survey was completed. In the prompted survey:

- Question 1 asked if participants had experienced an event which has made them feel bad about their weight and to specify the type(s) of stigma (e.g. nasty or inappropriate comments from others);
- Question 2 asked if participants had experienced a stressful event;
- Question 3 measured external shame using the external shame sub-scale from the External and Internal Shame Scale (Ferreira et al., 2020). The wording and original Likert-scale was adapted to capture momentary experiences and keep consistency between measures. Participants were asked how much they agree with four statements from the sub-scale in that moment, on a scale from 1 to 5 (1 = *completely disagree* to 5 = *completely agree*). See Appendix H for original EISS;
- Question 4 measured internalised weight stigma using the self-devaluation sub-scale of the Weight Self-Stigma Questionnaire (Lillis et al., 2010). Items were adapted to be used as a daily measure and to include preferred language regarding weight (see page 13). Participants were asked how much they agree with six statements from the sub-scale in that moment, on a scale from 1 to 5 (1 = *completely disagree* to 5 = *completely agree*), with language such as "overweight" changed to "excess weight". See Appendix H for original WSSQ.

If participants selected 'no' to both questions 1 and 2 in the prompted surveys (i.e. they had not experienced a weight stigma event, or a stressful event not related to their weight), the shame and IWS scores in that survey were said to correspond to a 'neutral' event.

PPI consultants discussed the period of self-monitoring of stigma versus participant burden. Efforts were made to keep the survey as brief as possible with the guidance on the survey protocol taken from another study. For survey see Appendix K.

Different versions of the daily surveys administered via Ethica Data were informally piloted on usability, acceptability and feasibility, including ease of use of the app and presentation of questions/answers. The pilots also informed how to support participants with downloading the app and getting started with the surveys which was discussed in the welcome call and written instructions offered to the participants.

Data-prompted interview (administered via Zoom)

The interview schedule was designed to provide an opportunity for participants to provide further information regarding their experiences of weight stigma during the survey period, and for the researcher to ask about any potential patterns in their data. The schedule included questions on participants' thoughts and experiences in relation to the research question. The main part of the interview asked questions in relation to each participant's individual graph which presented their survey data (e.g. daily fluctuations in shame and weight self-stigma in relation to weight stigma, stressful or neutral events) and other notable data to prompt reflection (e.g. total number of reported weight stigma events and type of weight stigma). Therefore each interview schedule was individualised to each participant and their data. Participants were asked to reflect on the specific events from the survey period, but if they could not recall these events, they were prompted to talk more generally about their experiences. Participants were also asked to comment on a recent weight stigma event and how it affected their thoughts and feelings, talk through their responses to weight stigma, and reflect on any other key or memorable weight stigma events that had affected them. Finally, participants were asked to reflect on the impact of taking part in the study and reporting on weight stigma, and given an opportunity to share any final thoughts or ideas for further research.

The interview schedule was informally piloted to ensure clarity of the questions (Appendix O).

Analysis

Visual analysis

Shame was measured using the four-item external shame sub-scale of the EISS (Ferreira et al., 2020), and IWS was measured using the six-item self-devaluation sub-scale of the WSSQ (Lillis et al., 2010). For both daily survey measures, participants rated items from 1 *(completely disagree)* to 5 *(completely agree).* For each survey completed, shame and IWS scores were determined by calculating a mean across the items of each respective sub-scale.

Shame and IWS scores in response to different events (i.e. weight stigma, stressful or neutral events) were graphically represented for each participant who took part in the interviews to prompt discussion. Events which were coded by participants as both weight stigma and stressful were coded

in the analyses and graphs as weight stigma responses. For an example of the graph shown to participants, see Appendix O.

Graphs were also generated to assess for pattern, trend and covariation using visual analysis. A line graph is used to assess if there was an association between participants' IWS and shame scores, and a bar graph format is used to assess if IWS and shame scores varied according to event type (weight stigma, stressful, neutral).

Visual analysis of graphic presentations of data is key to interpreting effects in single case (n=1) designs (Lane & Gast, 2014). Visual analysis involves plotting quantitative data observed over time and evaluation of trend, level and stability of data (Lane & Gast, 2014). In addition to the shame and IWS means from each survey, where data allowed, an event-response mean was also calculated for shame and IWS for each participant (i.e. an overall mean for shame and IWS across the daily survey means according to event type). These graphs and event-response means were to assess if there was any variation in these scores according to event. While this study is not a single case design, this method was used to interpret any trends in the graphs of survey data provided by each participant. This form of analysis is strengthened by replication which the current data set allowed (Morley, 2018). Visual analysis permits more than simple descriptive statistics, allowing to conservatively assess whether there are trends or effects in the data. The results section contains presentation of each persons' data in depth to provide context and detail to the qualitative findings. Simple descriptive statistics on a group this size would not be good evidence but detailed description of the relationship between factors for an individual is, when explored with theoretically derived hypotheses and replicated as Morley describes.

Interview analysis

Framework analysis (Ritchie & Spencer, 1994) was used to analyse the qualitative data obtained from the DPIs. Framework analysis is a type of thematic analysis most commonly used for semi-structured interview transcripts, but additionally allows for analysis across participants' accounts, as well as within each individual account so the nuance of each individual's experience remains (Gale, Heath, Cameron, Rashid & Redwood, 2013). Framework analysis is not aligned with a particular epistemological approach (Gale et al., 2013), and allows a priori knowledge to be used to develop and refine the thematic framework. Namely, the lead researcher considered the literature on shame and how this can be experienced (e.g. Ferreira et al., 2020), and the weight stigma and IWS literature (e.g. Lillis et al., 2010; Seacat et al., 2014) to assist with identifying codes, themes and patterns in the data.

The interview transcripts were read and reread to establish key "issues" or phrases ("familiarisation" stage), which were pertinent to the research question. After familiarisation, labels or codes paraphrasing the data which were of interest were applied to the transcripts. These codes were grouped under a working thematic framework which was then constructed and reviewed as part of an iterative, systematic process of data organising (indexing, sorting and reviewing data extracts) and describing data using data summaries. Framework analysis provides clearly defined stages of a matrix-based method for ordering and synthesising the data and reflects the data management of the interview transcripts (Gale et al., 2013). The next stage involved data abstraction and interpretation, and included refining the description and breadth of the final themes and sub-themes, identifying their characteristics, and mapping connections between them to explore possible connections or relationships in the data (Gale et al., 2013).

To ensure validity and reliability of the interpretation of the data (Elliott, Fischer & Rennie, 1999), credibility checks were conducted with both thesis supervisors. This involved sharing different stages of the data management (e.g. the indexing stage) to check data extracts corresponded to themes and sub-themes, and the thematic framework, with feedback incorporated to develop and refine the final themes and data extracts.

Reflexivity

Reflexivity involves the researcher's reflection on their role in the collection and interpretation of qualitative research; that is how their values, positionality and worldview can influence the construction of meanings and subsequently the findings (Dodgson, 2019; Palaganas, Sanchez, Molintas & Caricativo, 2017). In particular, it may be important to describe the extent to which the researcher shares experiences with the participants (Berger, 2015), considering both similarities and differences. This reflection was written in first person as follows.

I am conscious of weight stigma, both direct and indirect, as I have lived experience of female family members living with obesity. While I have not personally been affected by obesity, I feel I have lived with excess weight at times and have experienced subtle weight stigma, as well as witnessed weight stigma towards others. These experiences, along with an awareness of society's views on female bodies and weight, has likely contributed to a sensitised, often critical relationship to my own weight. As such, aspects of IWS were familiar to me. I am aware that these experiences likely shaped my interview style and interpretation of the data. Being female may have also influenced my interview style as I may have had ideas or assumptions based on my own experiences which guided the conversation. My clinical training may have prompted me to inquire more about internal or psychological states and meant I felt confident to ask about emotionally difficult content in the

interviews. My training likely influenced the interpretation of results, meaning I am more primed to recognise psychological concepts, patterns or themes in the data.

Ethical clearance

This study was reviewed and approved by the School of Medicine Research Ethics Committee, University of Leeds; an amendment was submitted for the qualitative interviews (see Appendix P).

Measures were taken to consider the safety and well-being of the participants, see "Procedure" section (p. 33).

All of the data collected during the study were anonymised or pseudo anonymised to protect confidentiality and saved in a secure location. Pseudonyms were created for the eight participants and these are presented alongside illustrative quotes in the results section. Any information which may have been identifiable for participants was omitted. All identifiable information was kept separately in a password-protected drive. To enable participants to complete the brief daily surveys the study used a purpose designed app (Ethica Data). This app is known to the research team and is GDPR compliant. For the baseline questionnaires, exit survey and some of the demographics forms, Online Surveys was used. This is GDPR compliant. For the interview, Zoom was used which is also GDPR compliant, with a back-up audio on an encrypted recording device provided by the University of Leeds. All audios were destroyed following completion of the study.

Results

Overview of participants and sample description

In total, 40 participants completed the baseline questionnaires, 16 people completed the daily surveys and eight participants completed the interviews (see Table 2 for demographic and psychometric data for these three groups of participants; see p. 34 and Appendix D for calculation of high and low cut-offs for the psychometric measures). For an overview of participants who provided initial consent at commencement of the study, through to those who completed the interviews, see Appendix Q.

Across the three sample groups, participants tended to report high shame and weight self-stigma. There was more variability in reporting of perceived stress across the three groups of participants. The interview sample was broadly similar to the survey sample, however no men took part in the interviews.

The majority of participants who took part were recruited via Twitter or tier two weight services, and some participants were recruited through personal networks.

For demographic and psychometric data at an individual level for the interview sample see Appendix R.

Table 2

Participant Demographic and Psychometric Data per Sample

	Total sample (n = 40)	Daily survey sample (n = 16)[a]	Interview sample (n = 8)
Gender, No (%)			
Male	NA	2 (12)	0 (0)
Female	NA	14 (88)	8 (100)
Age, mean (SD), y	NA	45.67 (12.5)	43.14 (13.9)
Ethnicity, No (%)			
White British	NA	14 (93)	6 (86)
White Other	NA	1 (7)	1 (14)

Civil status, No (%)			
Living with partner	NA	4 (26)	2 (29)
Married	NA	8 (53)	3 (42)
Single	NA	2 (14)	2 (29)
Divorced	NA	1 (7)	0
Highest education level attained, No (%)			
No qualifications	NA	1 (7)	0
GCSEs or equivalent	NA	1 (7)	0
A-levels or equivalent	NA	1 (7)	0
Vocational, professional	NA	3 (20)	2 (29)
Other higher education	NA	3 (20)	1 (14)
Degree level or higher	NA	6 (39)	4 (57)
BMI, mean (SD)	NA	40.61 (8.69)	37.07 (6.56)
Years affected by excess weight, mean (SD)	NA	26.73 (14.67)	29.14 (18.30)
Actively engaged in weight loss, No (%)			
Yes	NA	8 (54)	4 (57)
No	NA	7 (46)	3 (43)
EISS, mean (SD)	20.5 (6.1)	20.4 (5.6)	19.9 (5.4)
High shame, No (%)	30 (75)	12 (75)	7 (88)
Low shame, No (%)	10 (25)	4 (25)	1 (12)
WSSQ, mean (SD)	47.2 (9.4)		
Pre-survey		47.8 (7.3)	48.1 (7.6)
Post-survey		46.3 (6.8)	46.8 (5.0)
High self-stigma, No (%)	37 (93)		

Pre-survey		16 (100)	8 (100)
Post-survey		15[b] (100)	8 (100)
Low self-stigma, No (%)	3 (7)		
Pre-survey		0 (0)	0 (0)
Post-survey		0 (0)	0 (0)

[a] One demographics questionnaire missing.

[b] One post-survey WSSQ not completed.

Weight stigma experiences

The interview sample (*n* = 8) reported between six and 21 weight stigma events; an average of 11.13 weight stigma events per participant. This was broadly similar to the daily survey sample (*n* = 16) who reported between five and 24 external weight stigma events in the two-week survey period; an average of 12.5 weight stigma events per participant.

Participants in the interview group reported experiencing at least two types of weight stigma over the survey period (see Table 3); all participants in this group reported experiencing “Personal reminders of your weight (e.g. trying on clothes, mirror)”.

None of the interview participants reported to be specifically shielding or restricting face-to-face contact due to the pandemic, but were likely restricted by the measures and general advice in relation to the pandemic at that time.

Table 3

Type of Weight Stigma Experienced by Interview Participants During the Survey Period

Participant	Discrimination	Nasty or inappropriate comments from others	Loved ones embarrassed by your weight	Others making assumptions because of your weight	Structural or physical barriers (e.g. seats too small aisles too narrow no lift)	Exposure to news, social media or advertising	Personal reminders of your weight (e.g. trying on clothes, mirrors)
Ivy	X	X		X	X		
June	X	X		X	X	X	X
Kim	X	X	X	X	X	X	X
Lola		X		X			X
May		X	X	X			X
Nelle						X	X
Orla	X	X	X	X	X		X
Polly		X	X	X		X	X

Case series

Ivy

Ivy is a 33-year-old White British female who lives with her children and partner. She has a condition which means she is predisposed to carrying weight in the lower part of her body. She has been affected by excess weight for 21 years. At the time of the study, she was engaged in a weight loss programme, and her BMI was 36.5.

Ivy's baseline scores for shame and weight self-stigma were in the high range (Appendix R).

Historical weight stigma and internalised weight stigma

Ivy's problems with weight started when she was 13 years old. She saw herself as a "fat kid", not being diagnosed with the health condition which affected her weight until later. She described feeling relief at the diagnosis, as this meant the weight gain was not her "fault". She recalled stigmatising experiences from an early age and struggling to fit into some standard uniform items. Before her diagnosis, she described a period as a young person when she severely restricted her food to achieve weight loss, which greatly affected her physical and mental health.

Ivy described experiencing name calling on the street and assumptions made by doctors as the main types of weight stigma experienced. She described experiencing comments and stares over the years,

which has led her to perceive that "everyone" is staring, as she feels it is "what's been ingrained" in her head. She described struggling most with weight stigma from doctors as they are in a trusted position, while she felt she could ignore comments from strangers.

At times she looks at herself and thinks she is "disgusting", but in general she is no longer bothered about others' judgements. She indicated an awareness of "fat stereotypes", which at times could influence her perception of weight stigma: "if I tripped over…all I see is this …embarrassing fat person falling over… and [that]… everyone else will see it as hilarious because it's a fat bird that's fallen over". She felt more at fault or to blame for her weight when doing something which involved others noticing her weight (e.g. swimming, climbing stairs at work). This was accompanied by a felt sense of stigma from others, leading her to blame herself, thinking "what the hell have you done to yourself to get to this state".

Weight stigma, IWS and shame during survey period

In the interview, Ivy recalled two specific weight stigma experiences from the survey period. On one occasion she was shopping for clothes. She recalled "picking …shorts up, going and trying them on and feeling…massive disappointment that they're not going to fit…going shopping is just… horrible". She described how this experience made her feel "disappointed" in herself that her weight had "got to that point", blaming herself for her weight. She experienced no comments from others, but rather "blames" and "beats [herself] up" about her weight, feeling like others are judging and staring.

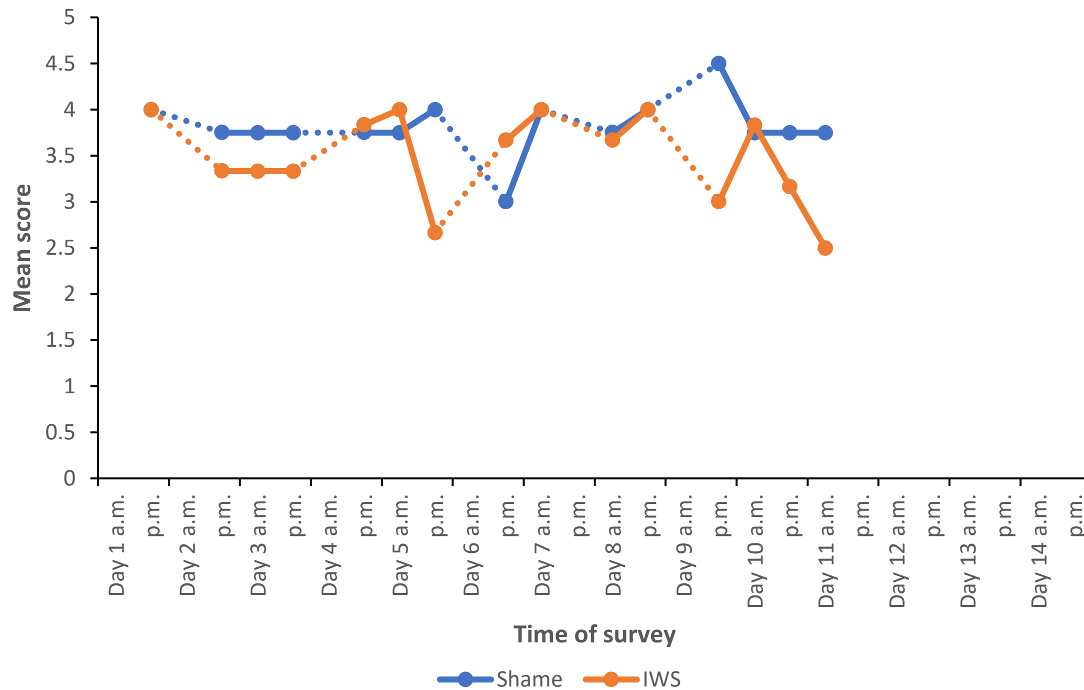
One experience was on holiday where a woman made nasty comments ("Jesus Christ there's a beached whale"), as well as commenting on the fact Ivy was wearing shorts, saying "I would not dare dress like that if I were your size". Her reaction was to defend herself. Ivy seemed to externalise the problem within the person who made the comments, saying "there's no filter with some people… they will just literally say anything". Reflecting that previously she would have "bawled [her] eyes out, run away and put some trousers on", she felt proud of herself, feeling that she is getting better at managing weight stigma as she is getting older.

Is there a relationship between shame and IWS?

As shown in Figure 1, Ivy completed a survey 15 times during the study period. Fourteen of these were in response to prompts, with one additional reporting of a stressful/weight stigma event. Her overall shame mean was 3.8, range = 3.0-4.5; and her overall IWS mean was 3.5, range 2.5-4.0. Visual analysis was unable to determine a relationship between fluctuations in shame and IWS.

Figure 1

Ivy's Experiences of Shame and IWS During the Survey Period



Do shame and IWS vary by type of event?

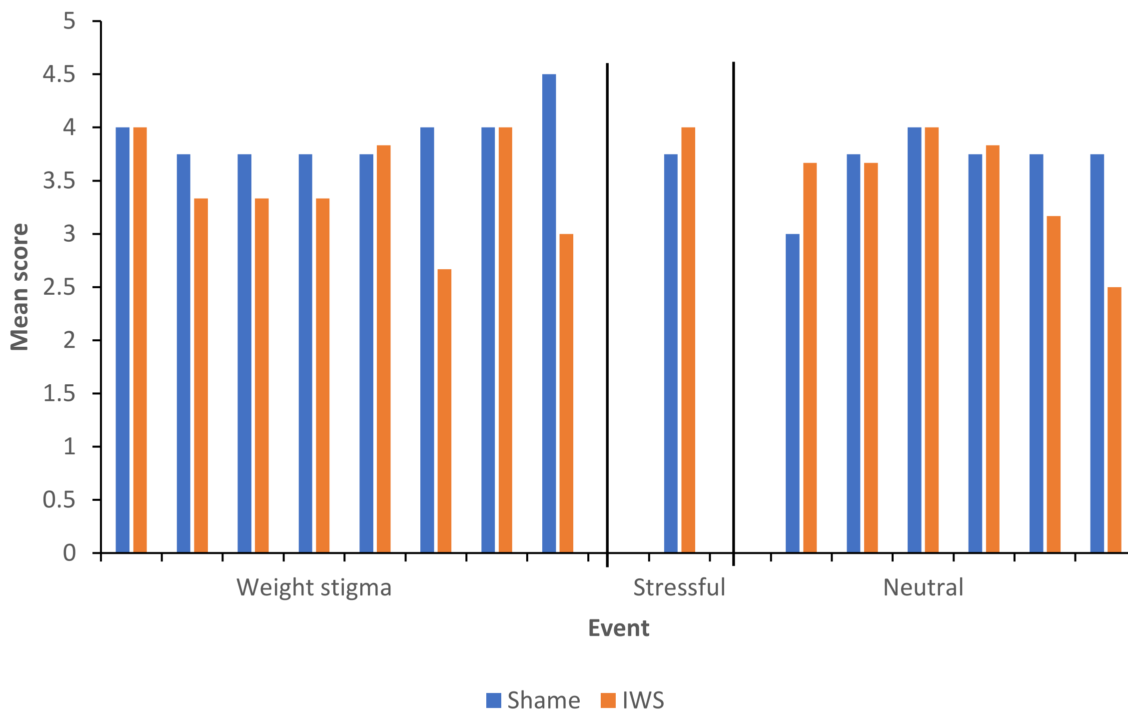
In the daily surveys, Ivy reported eight instances of weight stigma, one stressful event and six neutral events (Figure 2). Ivy reported this was representative of the frequency of stigma in her everyday life.

There were sufficient data to compare responses to weight stigma events and responses to neutral events. As there is only one set of scores for responses to stressful events, visual analysis or event-response means cannot be used to compare responses for stressful events. Visual analysis suggests that her shame scores tended to be slightly higher in response to weight stigma events than neutral events. The shame mean score was higher in response to weight stigma events (3.9) than in response to neutral events (3.7). The self-stigma mean was lower in response to weight stigma events (3.4) than in response to neutral events (3.5), but as this was minimal it is possible the self-stigma response is unaffected by event type (weight stigma event versus neutral event).

In the interview, Ivy agreed with the suggestion that feelings of blame and self-judgement "surface more" when she is reminded of her weight (e.g. when shopping for clothes).

Figure 2

Ivy's Experiences of Shame and IWS According to Event



June

June is a White British female in her 50s who lives alone. She has been affected by excess weight for 30 to 35 years. Due to missing data, it is unknown if at the time of the study, she was engaged in an active attempt to lose weight. At the time of the interview, she had recently been diagnosed with Attention Deficit Hyperactive Disorder.

June's baseline scores for shame and weight self-stigma were in the high range (Appendix R).

Historical weight stigma and internalised weight stigma

June reflected on a recent internal shift which meant she felt more able to talk about weight stigma and related issues. She reported previously she had found it too upsetting to talk about and would avoid media content which discussed this.

June described previous weight stigma events which were often aggressive, insulting or threatening and perpetrated by men. She reflected that what had made these experiences more affecting was that when people witnessed these acts, neither strangers nor friends said or did anything in her defence, which she interpreted as implicit agreement. She also reflected on more indirect experiences of weight stigma (e.g. meeting clients face-to-face for the first time and noticing their visible surprise at her appearance).

Previously she blamed herself for being fat, felt deep shame after experiencing weight stigma and would “beat [herself] up” after nasty comments were made, and would agree with them. However, now she feels her self-blame has “disappeared”, which she attributes to growing older and concluding that diets contributed to her weight gain: “it was just a kind of slow realisation…of losing weight, and then putting more back on and losing weight and putting more back on until … [I thought] well hang on if …you do that enough, you end up looking like me”. She no longer feels shame about her weight, “as shame implies blame, it implies I did something wrong”, which she does not identify with. However, she identified with experiencing a “fear of stigma”, giving an example of declining to go to the theatre as she would not fit in the seats.

While she was particularly aware of different types of weight stigma when she was younger, she felt she had not experienced any explicit interpersonal weight stigma recently or generally in her current everyday life. She wonders if the world is changing, or if she is “allowed to be fat” now she is getting older. Nevertheless, she felt strongly that public health initiatives on obesity were stigmatising, and they validated society’s treatment and stereotypes of people with excess weight.

Weight stigma, IWS and shame during the survey period

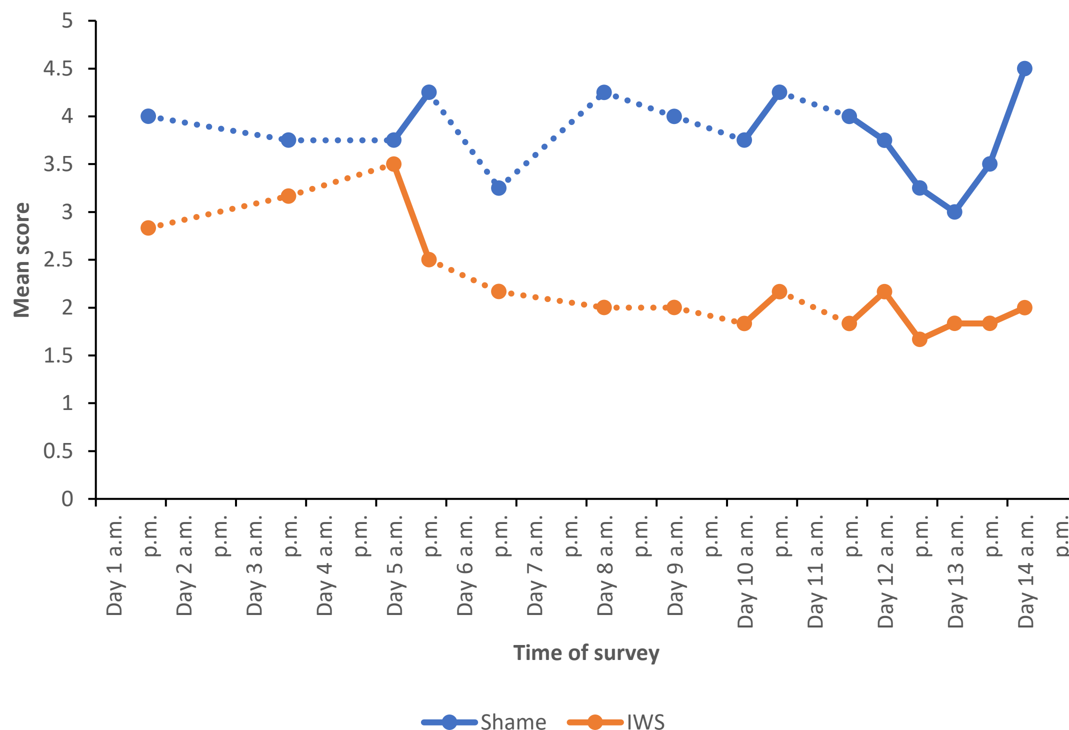
In the interview, June could not recall specific instances from the survey period where she had reported weight stigma, and spoke more generally about examples of weight stigma such as a friend making a “fat joke”, which she experienced as “othering”, and feeling “metaphorically thrown out of the group”.

Is there a relationship between shame and IWS?

As shown in Figure 3, June completed daily surveys 15 times during the study period. Thirteen of these were in response to prompts, with one reporting of a stressful/weight stigma event, and one reporting of a weight stigma event. Her overall shame mean was 3.8, range: 3.0-4.5; and her overall IWS mean was 2.2, range: 1.7-3.5. Visual analysis was unable to determine a relationship between fluctuations in shame and self-stigma. The interview data suggested that her experiences of IWS was very high.

Figure 3

June's Experiences of Shame and IWS During the Survey Period



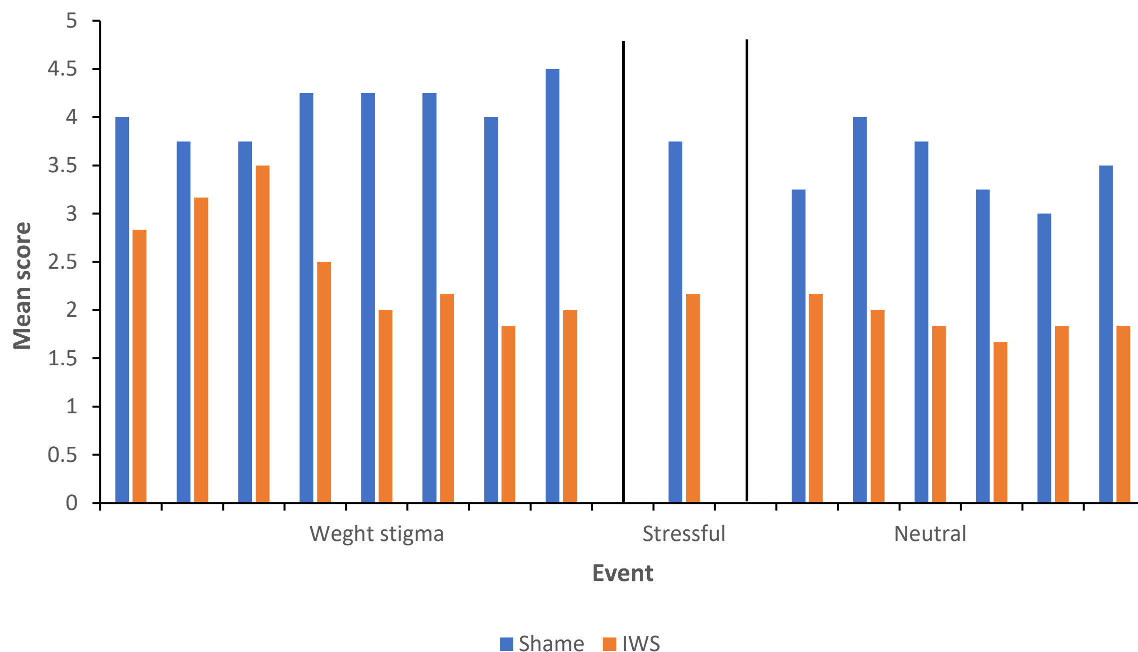
Do shame and IWS vary by type of event?

In the daily surveys, June reported eight instances of weight stigma, one stressful event and six neutral events (see Figure 4). June reported the survey period was not representative of her experience with obesity as she was not leaving the house much due to the pandemic.

There were sufficient data to compare responses to weight stigma events and responses to neutral events. As there is only one set of scores for responses to stressful events, visual analysis or event-response means cannot be used for comparison to stressful events. Visual analysis suggests that her shame and self-stigma scores tended to be slightly higher in response to weight stigma events than neutral events. The shame mean score was higher in response to weight stigma events (4.1) than neutral events (3.5). Similarly, the self-stigma mean was higher in response to weight stigma events (2.5) than in response to neutral events (1.9).

Figure 4

June's Experiences of Shame and IWS According to Event



Kim

Kim is a 54-year-old White British female who is single. She has been affected by excess weight for 50 years. At the time of the study, she was engaged in a tier two weight management programme, and her BMI was 51.3. She had previously had weight-loss surgery (gastric sleeve) and described in interview that she was considering a gastric bypass.

Kim's baseline scores for shame and weight self-stigma were in the high range (Appendix R).

Historical weight stigma and internalised weight stigma

Kim experienced "cruel things" said to her about her weight from an early age, which she believes relates to how she sees herself and manages "the shame and guilt of being overweight". She identified with being self-critical in all areas of her life, and tended to attribute her self-perceived faults or failures to having excess weight ("when I get really angry with myself that I can't find things it's because I'm fat and lazy because I don't tidy up").

Kim was first put on a diet when she was five years old. Kim reported that there were "issues" around weight and food at home, with her mother being overweight, and her sisters also becoming overweight. Her father was very critical of people with excess weight. She described experiencing shame and guilt as a result of her father's reaction to her weight. She struggled in school due to her weight, and was criticised by a teacher, being told she was "disgusting", a word which she continues

to apply to herself. She identified as the "fattest kid in school" and described struggling with physical exercise and being laughed at for her weight.

Kim acknowledged that most of the weight stigma she experiences now is felt or perceived, rather than enacted. However, she was able to recall specific experiences of enacted weight stigma (e.g. assumptions or nasty comments made by others). She experiences shame and guilt about her weight on a daily basis. She uses "harsh words" to describe herself to others and to herself. She acknowledged that she is also (internally) similarly critical of others affected by excess weight.

Weight stigma, IWS and shame during the survey period

In the interview, Kim reported the majority of weight stigma events experienced during the survey period were perceived rather than enacted events, mainly because she was going out less due to the pandemic. She recalled one instance as travelling to work and being conscious she was taking up more than one space on a crowded bus ("I'd started getting myself all worked up about it, that people were, you know, the entire bus were basically saying well there's a space there if she weren't so fat"). Kim also described seeing herself in windows or online meetings as stigmatising ("it is just that constant reminder that… you're not an attractive woman, because of the amount of fat").

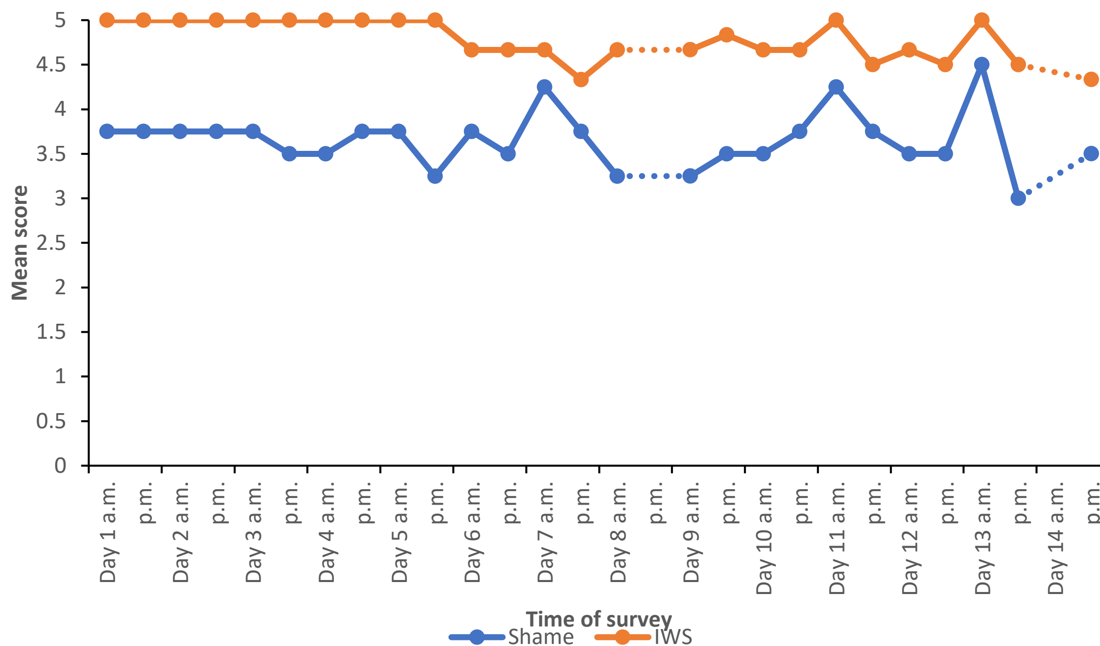
Other experiences of perceived stigma during the survey period included experiencing a look from someone as "scathing" or "dismissive", and interpreting that as due to her excess weight. Or similarly a "throwaway comment" from someone that had been interpreted as "something way bigger than it was ever meant to be or completely out of context" due to her feeling bad about herself and "then projecting that on others".

Is there a relationship between shame and IWS?

As shown in Figure 5, Kim completed daily surveys 26 times during the study period. Twenty-five of these were in response to prompts, with one additional reporting of a stressful/weight stigma event. Her overall shame mean was 3.7, range: 3.0-4.5; and her overall IWS mean was 4.8, range: 4.5-5.0. Her IWS score shows nearly no variation across the surveys. Despite some similar pattern in ratings, visual analysis does not convincingly indicate a relationship between fluctuations in shame and self-stigma.

Figure 5

Kim's Experiences of Shame and IWS During the Survey Period



Do shame and IWS vary by type of event?

In the daily surveys, Kim reported 14 instances of weight stigma, one stressful event and 11 neutral events (see Figure 6). Kim reported this was representative of her experience, which she highlighted included both enacted and perceived stigma.

There were sufficient data to compare responses to weight stigma events and responses to neutral events. As there is only one set of scores for responses to stressful events, visual analysis or event-response means cannot be used for comparison for stressful events. Visual analysis suggests that her shame and self-stigma scores tended to be slightly higher in response to weight stigma events than neutral events. The shame mean score was higher in response to weight stigma events (3.7) than neutral events (3.5). Similarly, the self-stigma score was higher in response to weight stigma events (4.9) than neutral events (4.6). However, these differences between means are small.

Kim agreed with the reflection in her interview that her weight stigma scores tended to increase slightly following weight stigma, and were slightly lower following neutral events.

Figure 6

Kim's Experiences of Shame and IWS According to Event

Lola

Lola is a 44-year-old White British female who lives with her partner. She has been affected by excess weight on and off since she was eight years old. At the time of the study, she was engaged in a tier two weight management programme, and her BMI was 35.3.

Lola's baseline score for weight self-stigma was in the high range; her score for shame was in the low range (Appendix R).

Historical weight stigma and internalised weight stigma

Lola reported not experiencing weight stigma from others (e.g. name calling, bullying) when she was younger. However, she described struggling with weight self-stigma from an early age, and never really liking her body.

Lola had not experienced weight stigma from others as an adult, except from health professionals. However, she reported that if somebody does say something to her about her weight "that is all that's on [her] mind". She described tactics to try and prevent these comments being made by others, such as saying something first or making a joke "to mask" how she really feels.

Her most difficult and memorable experiences of weight stigma were from healthcare professionals, such as a midwife during her labour making nasty comments. Lola experiences back pain, which she has been told by her doctor is due to her weight: "I'm reminded every day when… my back hurts like, gosh, if, if I wasn't so big I wouldn't be putting a strain on my back… and I probably won't have them [self-stigma] thoughts".

Lola reported she was mostly affected by self-stigma, particularly after seeing herself in mirror, experiencing back pain, or not eating healthily enough. She believes the self-stigma has come from a time when she has been stigmatising towards others. She denied feeling judged by others about her weight, attributing her perception from others to her own thoughts and wondering if she is perceived by others as "obese" ("those thoughts have been in my head because you know it at end of day, on paper, I am. Inside I don't feel it, but mentally I do").

Weight stigma, IWS and shame during the survey period

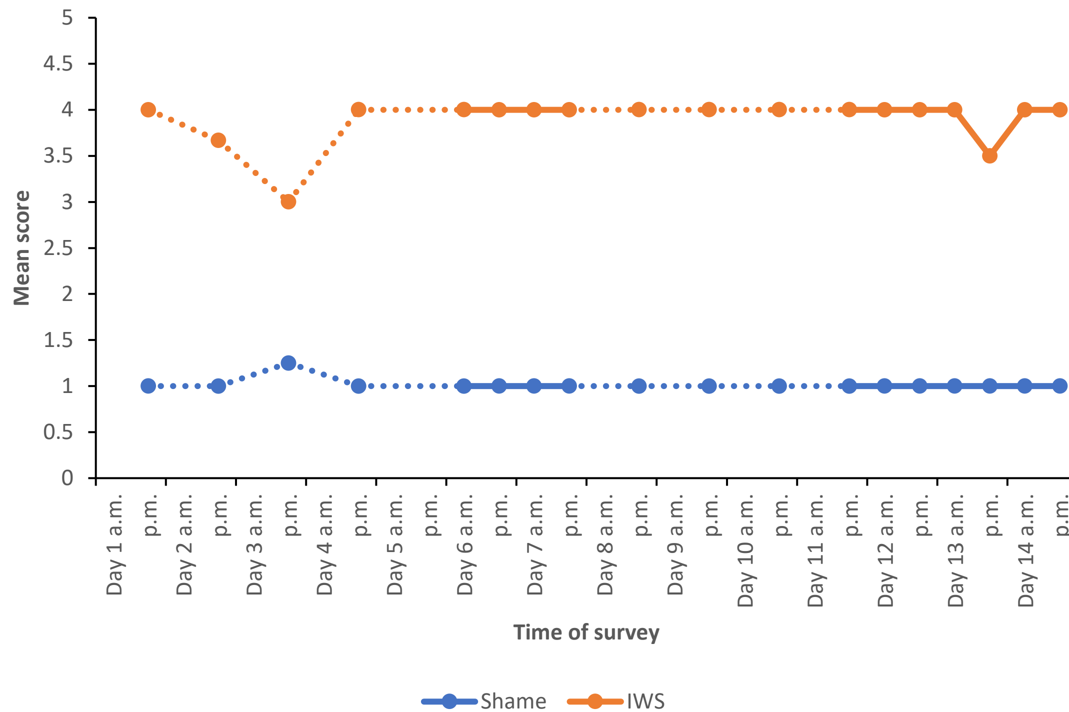
In the interview, Lola could not recall specific instances of stigma from the survey period. However, she spoke in general terms about the types of weight stigma she experienced, such as others making assumptions, which she gave as an example of perceived stigma: "it's not that anybody's said anything to me, it's…my own thoughts of if people are going to think that…if I'm in a shop. If I pick something up…say a bar of chocolate… something…that obviously is not healthy… I feel that that person will look at me and judge me and think "well you shouldn't be having that really".

Is there a relationship between shame and IWS?

As shown in Figure 7, Lola completed daily surveys 18 times during the study period. Seventeen of these were in response to prompts, with one reporting of a stressful/weight stigma event. Her overall shame mean was 1.0, range: 1.0-1.3; and her overall IWS mean was 3.9, range: 3.0-4.0. Her IWS and shame scores show nearly no variation across the surveys. Visual analysis was unable to determine a relationship between fluctuations in shame and self-stigma.

Figure 7

Lola's Experiences of Shame and IWS During the Survey Period



Do shame and IWS vary by type of event?

In the daily surveys, Lola reported 16 instances of weight stigma, no stressful events and two neutral events (see Figure 8). Lola reported this was representative of the frequency of some form of weight stigma in her everyday life.

As there are only two sets of scores for responses to neutral events, and no scores for stressful events, visual analysis or event-response means cannot be used for comparison between event types.

In the interview, Lola agreed with the reflection that her shame and self-stigma scores stay steady and do not change in relation to weight stigma, stressful or neutral events.

Figure 8

Lola's Experiences of Shame and IWS According to Event

May

May is a 31-year-old White British female who is married. She has seen herself as "fat" since she was ten years old, although she acknowledged she was not affected by excess weight from this age. She has been affected by a higher weight for ten years, and she reported considerable variation in her weight over this time. At the time of the study, she was not engaged in an active attempt to lose weight, and her BMI was 34.2.

May's baseline scores for shame and weight self-stigma were in the high range (Appendix R).

Historical weight stigma and internalised weight stigma

May believes her relationship with her weight and how she speaks to herself about her weight was affected by her mother's relationship to her weight and critical comments made by her grandmother from an early age. May feels she has been "berating" herself about her weight since she was ten years old. May also acknowledged the tendency to attribute non weight-related events to her weight ("if I wasn't so fat and lazy that wouldn't have happened")

May described previous experiences of weight stigma, including verbally violent comments, judgemental looks from others and microaggressions (e.g. someone making critical comments to May

about other people affected by excess weight). When her weight has changed, she has perceived that the same people seem to treat her differently; that is paying more attention to her when she has a lower weight. She acknowledged it is harder to experience microaggressions than direct abusive comments, especially when made by loved ones. May wondered if she makes interpretations of ambiguous comments as relating to her weight, due to her self-consciousness about her weight.

May described feeling shame, embarrassment and inadequacy after experiencing weight stigma. She acknowledged previously being very self-critical and self-hating about her weight although she was trying to improve in this regard and be more self-compassionate, particularly as she is compassionate towards others with excess weight.

Weight stigma, IWS and shame during the survey period

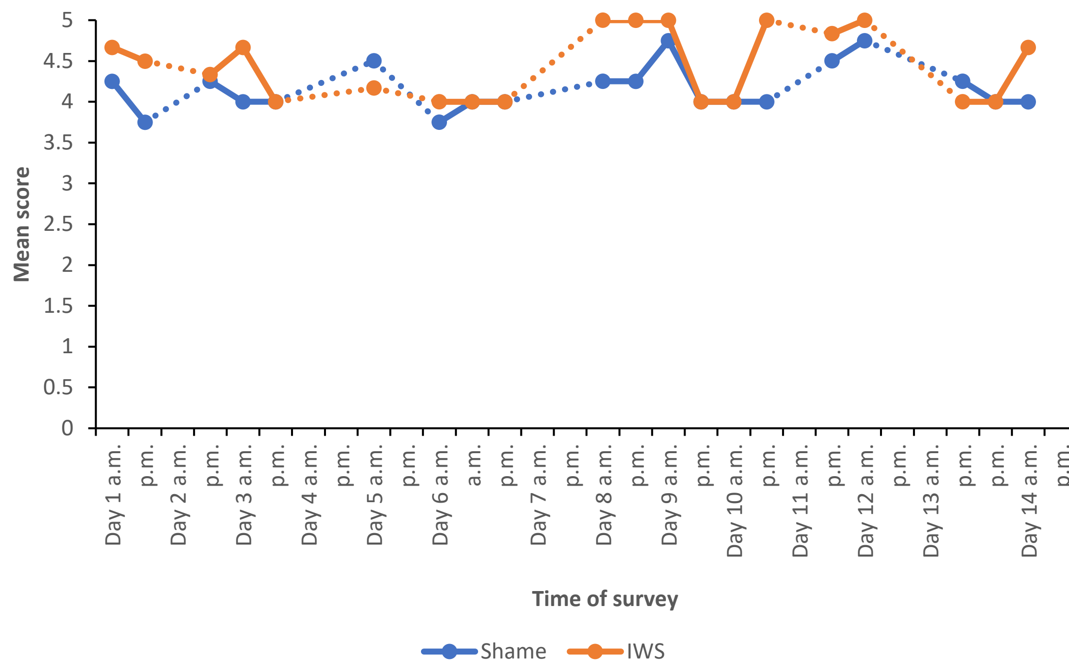
In the interview, May recalled some events of weight stigma from the survey period. One instance involved friends making insensitive comments about their own weight or size: "they were all laughing [and pushing out their tummies] saying look at us we're so fat, we look pregnant…I said to her, I don't have the choice. That's how I look"). Another example she gave was her mother-in-law visiting who is "fat phobic". While May could not recall specific details, she spoke generally about the comments made by her mother-in-law: "even if not directly to me so she'll say things like oh one of my friends has got so fat she can't tie her shoelaces up properly. And then she'll kind of look at me"). Finally, she also recalled personal reminders about her weight (e.g. trying on clothes which previously had fitted).

Is there a relationship between shame and IWS?

As shown in Figure 9, May completed daily surveys 20 times during the study period. All of these were in response to prompts. Her overall shame mean was 4.2, range: 3.8-4.8; and her overall IWS mean was 4.4, range: 4.0-5.0. Despite some similarities in patterns, visual analysis was unable to determine a relationship between fluctuations in shame and self-stigma.

Figure 9

May's Experiences of Shame and IWS During the Survey Period



Do shame and IWS vary by type of event?

In the daily surveys, May reported eight instances of weight stigma, two stressful event and ten neutral events (see Figure 10). May reported this was representative of the frequency of perceived and enacted weight stigma.

There were sufficient data to compare responses to weight stigma events and responses to neutral events. As there are only two sets of scores for responses to stressful events, visual analysis or event-response means cannot be used for comparison to stressful events. Visual analysis suggests that her shame and self-stigma scores tended to be slightly higher in response to weight stigma events than neutral events. The shame mean score was higher in response to weight stigma events (4.4) than neutral events (4). Similarly, the self-stigma score was higher in response to weight stigma events (4.8) than neutral events (4.2).

Figure 10

May's Experiences of Shame and IWS According to Event

Nelle

Nelle is a 34-year-old White American female who is married. She has been affected by excess weight since she was 18 years old. At the time of the interview, she was being treated for hypothyroidism. At the time of the study, she was not engaged in any active attempts to lose weight, and her BMI was 37.

Nelle's baseline scores for shame and weight self-stigma were in the high range (Appendix R).

Historical weight stigma and internalised weight stigma

Nelle experienced critical and stigmatising comments from her father about her weight from an early age. While she internalised these messages at the time, she was later able to disregard his opinions. She recalled historical and current stigmatising experiences with medical professionals, specifically that they can make assumptions about her and her capabilities because of her weight. She reported she experienced various authority figures tell her she was disadvantaged and inferior because of her weight. She also alluded to peers being unkind about her weight when she was younger.

Nelle grew up in America. Her perception is that British people are more accepting of more diverse weights and body shapes, which has helped how she sees herself.

She recalled being more critical and self-blaming about her weight when she was younger. She recalled a shift in her self-blame when she was dieting and exercising and her weight remained the same. Through persistence with various doctors and discounting often stigmatising interactions, she has since been treated for an underlying health condition. This has helped her to see her weight as not her “fault”.

Weight stigma, IWS and shame during the survey period

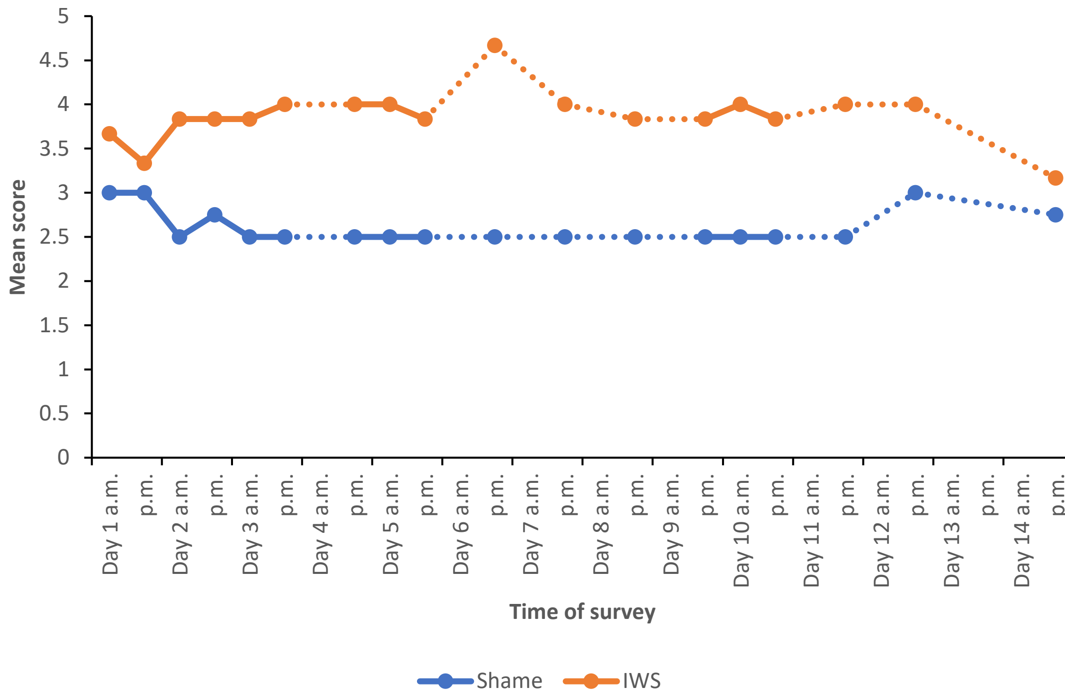
In the interview, Nelle reported she answered the surveys quite similarly most of the time. In the interview, she wondered if “spikes” on her graph coincided with a doctor’s appointment. She reported feeling “helpless” after these appointments (“it’s hard to be told the cause of your problems is your weight. And then I say, then help me lose that weight, and then I don’t hear anything, they ignore it and drop me”). She also recalled an instance of seeing her reflection, which may have contributed to a fluctuation in her self-stigma.

Is there a relationship between shame and IWS?

As shown in Figure 11, Nelle completed daily surveys 18 times during the study period. All of these were in response to prompts. Her overall shame mean was 2.6, range: 2.5-3.0; and her overall IWS mean was 3.9, range: 3.2-4.7. Her shame score shows nearly no variation across the surveys. Visual analysis was unable to determine a relationship between fluctuations in shame and self-stigma.

Figure 11

Nelle's Experiences of Shame and IWS During the Survey Period



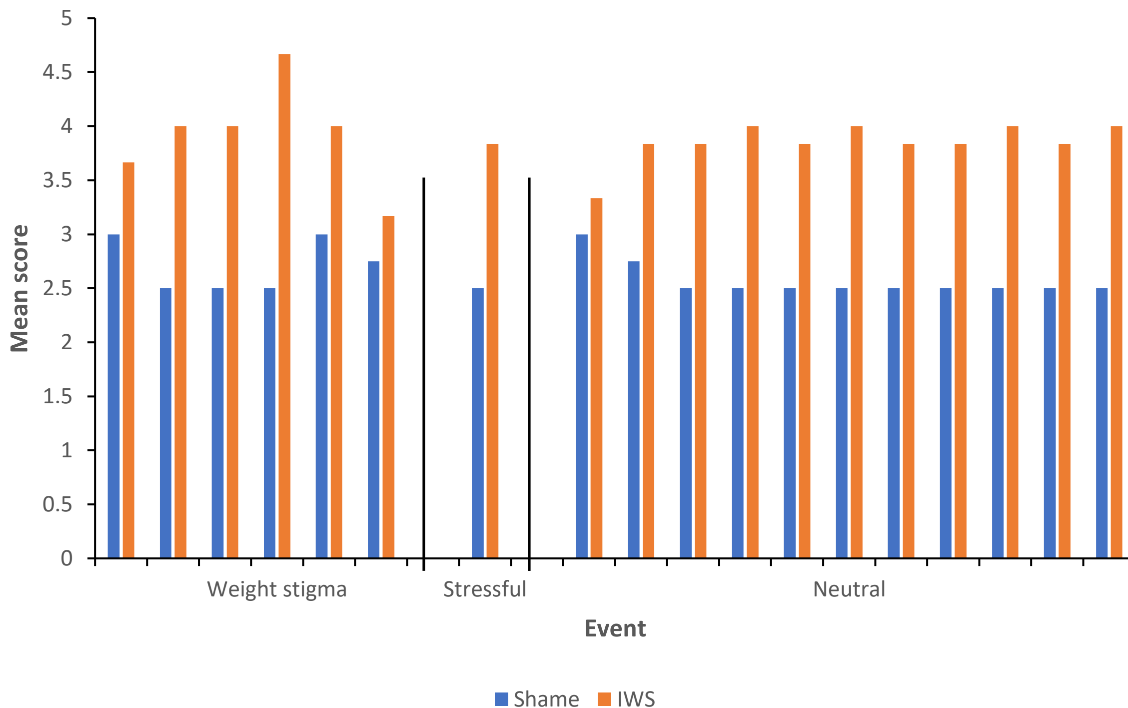
Do shame and IWS vary by type of event?

In the daily surveys, Nelle reported six instances of weight stigma, one stressful event and 11 neutral events (see Figure 12). Nelle reported this frequency of weight stigma events was higher than she would have expected.

There were sufficient data to compare responses to weight stigma events and responses to neutral events. As there is only one set of scores for responses to stressful events, visual analysis or event-response means cannot be used for comparison to stressful events. Visual analysis suggests that her shame and self-stigma scores tended to be slightly higher in response to weight stigma events than neutral events. The shame mean score was higher in response to weight stigma events (2.7) than neutral events (2.6). Similarly, the self-stigma score was moderately higher in response to weight stigma events (3.9) than neutral events (3.9). However, these differences between means were very small.

Figure 12

Nelle's Experiences of Shame and IWS According to Event



Orla

Orla is a 79-year-old White British female who is single. She has been affected by excess weight since she was 13 years old. At the time of the study, she was engaged in a tier two weight management group, and her BMI was 32.6.

Orla's baseline scores for shame and weight self-stigma were in the high range (Appendix R).

Historical weight stigma and internalised weight stigma.

In her earlier life, Orla's father made jokes about her weight or made very direct comments about her need to lose weight because of his concerns for her health. She had a close relationship with her father and took these comments "to heart" and recalled that these comments made her feel ashamed and ugly. She also recalled a difficult early experience with a doctor who advised her to "eat an apple a day" to manage her weight, which also made her feel ashamed.

During her life, she recalled different instances of weight stigma from direct nasty comments from colleagues or acquaintances, to environmental weight stigma where she was “too big” for standard sized seat belts on a plane which made her feel “ashamed for months”.

Orla reported experiencing weight stigma from her brother or comments from strangers in public. She reported it is worse when she experiences weight stigma from someone she knows. Orla mainly reported experiences of direct rather than perceived stigma.

Weight stigma, IWS and shame during the survey period

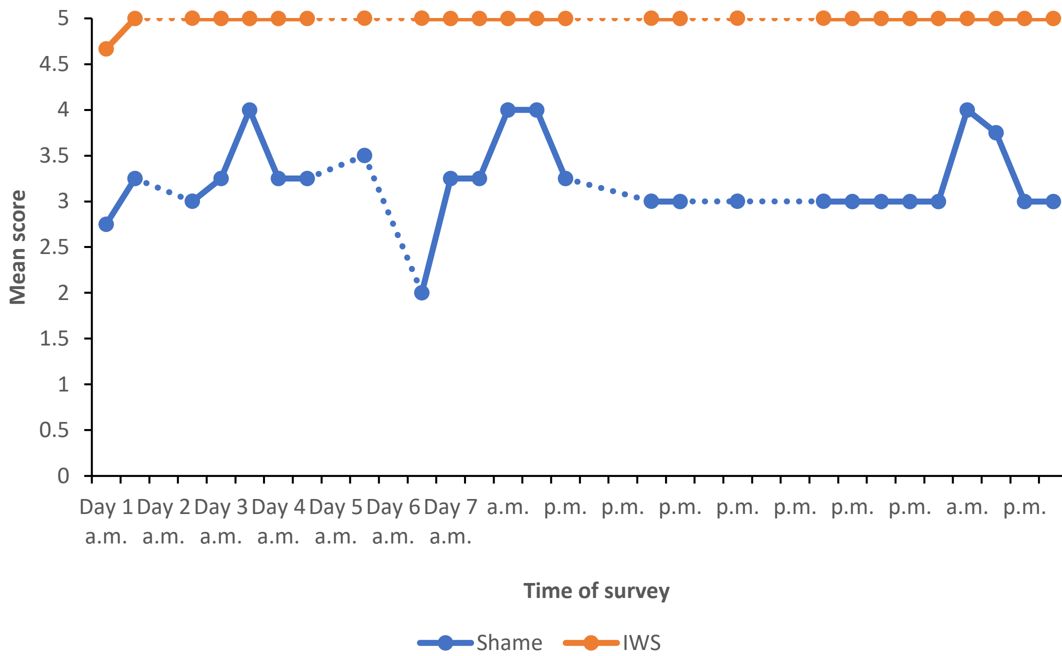
In the interview, Orla recalled going for a drink with her brother during the survey period where he made a hurtful comment about her weight. Following this, the comment “stuck there for the week”, and she had a “dreadful week” where “everything seemed to go wrong”. She recalled another instance where she attended her weight management group and was disappointed that she had not lost weight, despite trying hard that week. Finally, another personal reminder was when she saw herself in a mirror, as she felt “ashamed and disappointed” she had not lost more weight.

Is there a relationship between shame and IWS?

As shown in Figure 13, Orla completed daily surveys 26 times during the study period. Sixteen of these were in response to prompts, and ten were self-initiated reports which included nine stressful/weight stigma events, and one weight stigma only event. Her overall shame mean was 3.2, range: 2.0-4.0; and her overall IWS mean was 5.0, range: 4.7-5.0. Her IWS score shows nearly no variation across the surveys. Visual analysis was unable to determine a relationship between fluctuations in shame and self-stigma.

Figure 13

Orla’s Experiences of Shame and IWS During the Survey Period



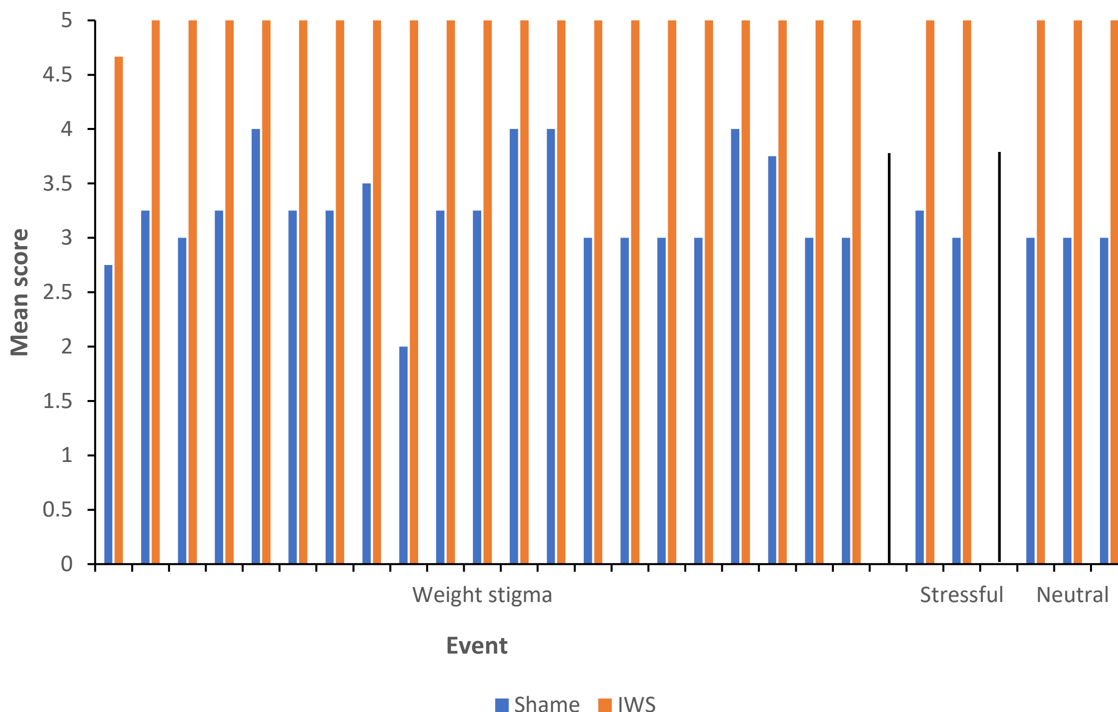
Do shame and IWS vary by type of event?

In the daily surveys, Orla reported 21 instances of weight stigma, two stressful events and three neutral events (see Figure 14). Orla reported this number of weight stigma events was higher than she expected.

As there are only two sets of scores for responses to stressful events, and three sets of scores for responses to neutral events, visual analysis or event-response means cannot be used.

Figure 14

Orla's Experiences of Shame and IWS According to Event



Polly

Polly is a 37-year-old White British female who is married. She has been affected by excess weight for 15 years. At the time of the study, she was not engaged in any active attempts to lose weight, and her BMI was 32.4.

Polly's baseline scores for shame and weight self-stigma were in the high range (Appendix R).

Historical weight stigma and internalised weight stigma

Growing up, Polly's mother and grandmother were "always on diets". She recalled some of her most difficult memories about putting weight on were going shopping with her mum and her commenting "well you'll need a bigger size". As adults, Polly's mother has tried to engage with Polly about their shared experience of being affected by excess weight. Polly reported that these conversations are difficult for Polly, with assumptions made by her mother which Polly does not necessarily connect with, or her making comments which Polly finds painful to hear.

Polly reported a "deeply ingrained belief it is better to be thin", which she attributed to family and societal messages regarding weight. She reported feeling very aware of the message from society that "obesity is a choice", and that therefore it is her "fault" if she cannot diet or chooses not to. While she acknowledges unhelpful influences from the diet and food industry, and a belief that diets do not work, she is still left with a feeling that she is "choosing" to be affected by obesity.

Polly reported that she tries to ignore weight stigma if she can. She felt that the shame about her weight "is always there, but stigma will be an external reminder of it". She reported feeling "lesser" because of her weight. Thus, experiencing weight stigma will often bring her attention to these difficult feelings.

In particular, she reported finding clothes shopping "triggering" and often resulted in thoughts around feeling different and feeling shame. She reported that it was rare for others to make direct comments about her weight, except for her family.

Weight stigma, IWS and shame during the survey period

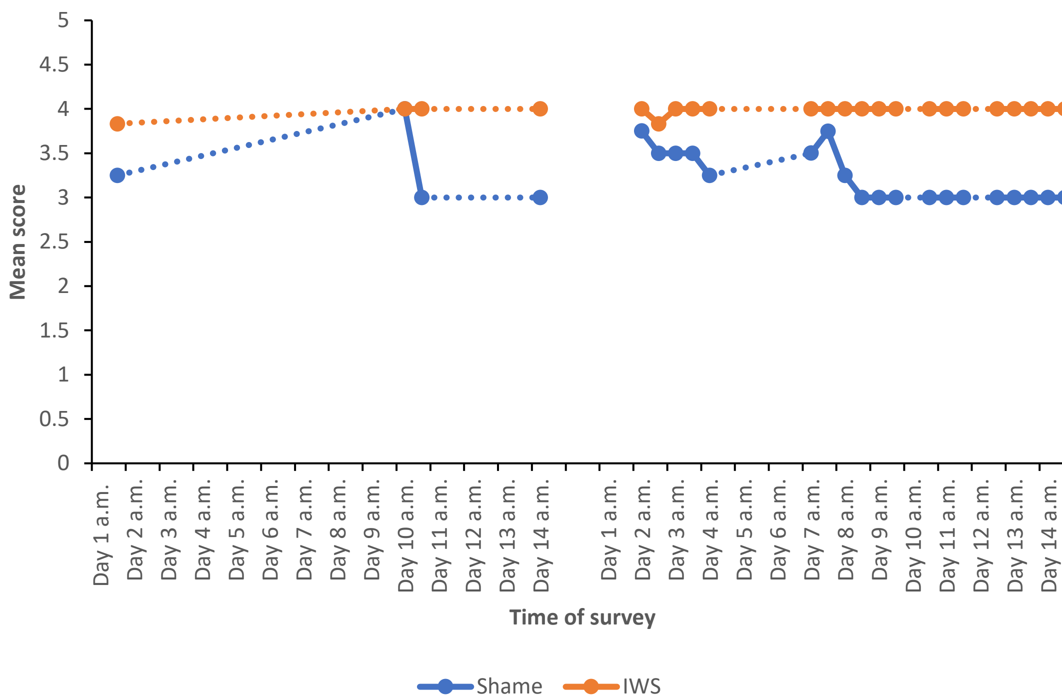
In the interview, Polly could not recall any specific instances of weight stigma during the survey periods. Therefore, she spoke more generally about things which are "triggering or difficult" for her regarding her weight, such as going clothes shopping or comments from family.

Is there a relationship between shame and IWS?

As shown in Figure 15, Polly participated in two periods of data collection for the surveys. This was due to technical issues in the first instance. Polly completed daily surveys 23 times over both periods. All of these were in response to prompts. Her overall shame mean was 3.2, range 3.0-4.0; her overall IWS mean was 4.0, range 3.8-4.0. Her IWS score shows nearly no variation across the surveys. Visual analysis was unable to determine a relationship between fluctuations in shame and self-stigma.

Figure 15

Polly's Experiences of Shame and IWS During the Survey Periods



Do shame and IWS vary by type of event?

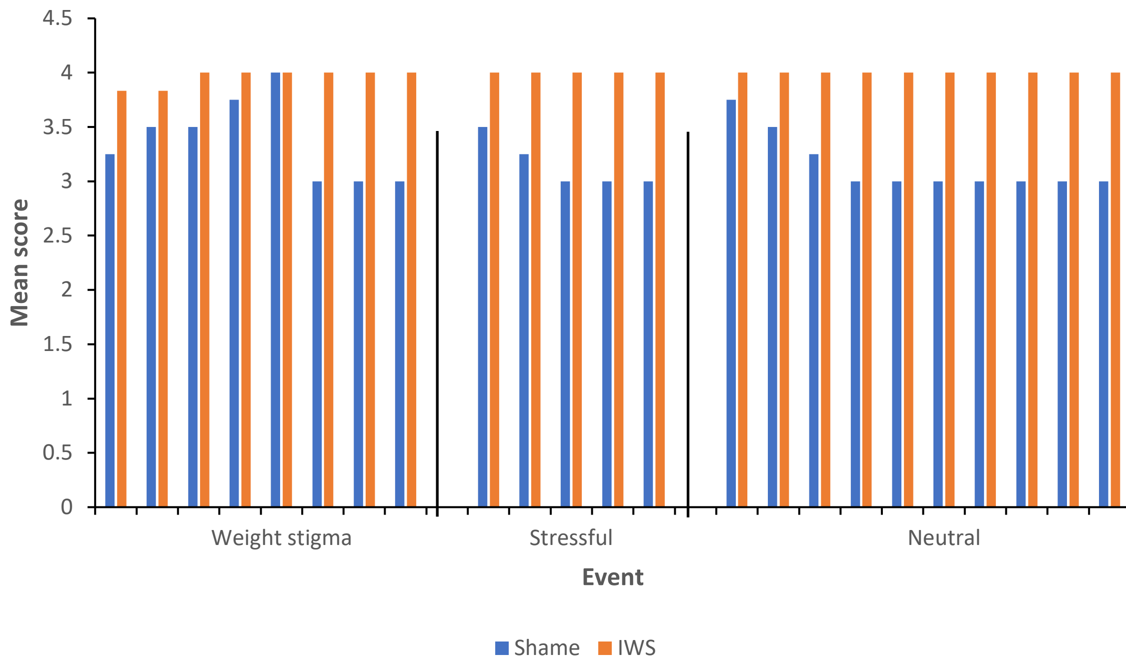
In the daily surveys, Polly reported eight instances of weight stigma, five stressful events and ten neutral events (see Figure 16) during the extended survey period. During the second survey period, Polly reported four events of weight stigma in two weeks which she reported was representative of the frequency of stigma in her everyday life.

There were sufficient data to compare responses to weight stigma events, stressful events and neutral events. Visual analysis suggests that her shame scores tended to be slightly higher in response to weight stigma events, than stressful or neutral events. The shame mean score was higher in response to weight stigma events (3.4) than stressful events (3.2) or neutral events (3.2). However, the self-stigma score remained stable in response to weight stigma events (4.0), stressful events (4.0) and neutral events (4.0).

Polly agreed with the suggestion by her graph that the self-stigma scores stay steady day-to-day. While the survey directed her attention towards shame and self-stigma, she reported that these thoughts and feeling are “always in the background”. However, the difference for her was then how much she thought about these things.

Figure 16

Polly’s Experiences of Shame and IWS According to Event



Summary

Overall, visual analysis was unable to determine any relationship between shame and weight self-stigma. For three participants (Kim, Orla, Polly), their daily IWS scores stayed steady and high while their shame scores fluctuated more. For Nelle there was little fluctuation in her shame scores; while for Lola there was little fluctuation in either her IWS or shame scores.

Visual analysis of shame and IWS according to event type was limited by lack of sufficient response data to all event types for each participant. For five participants, responses to two event types were compared, for one participant responses to all three event types were compared, and for two participants no comparisons were possible. As these analyses were not performed for every interview participant, these results will be interpreted with caution. Visual analysis and event-response means suggested IWS scores tended to be higher in response to weight stigma events, as opposed to neutral events for four participants (June, Kim, May, Nelle). Visual analysis and event-response means further suggested shame scores for these same participants tended to be higher in response to weight stigma events, as opposed to neutral events. For two participants (Ivy, Polly), event-response means suggest their IWS remained the same regardless of whether having experienced a weight stigma or neutral event (both) or stressful event (Polly only), while their shame scores increased in response to a weight stigma event. However, the differences between means are small.

Framework analysis

The interviews further explored how people with obesity experience internalised weight stigma and shame in relation to external weight stigma. Specifically, they explored the experiences of shame and IWS in response to external weight stigma, and in contrast to non-weight based events, as well as investigating other factors which may be related to the relationship between weight stigma and IWS.

It was evident from the interviews that participants were familiar with experiences of external weight stigma and their own weight self-stigma. Shame, or descriptions which alluded to shame, were often expressed when discussing these experiences, along with embarrassment and humiliation. Participants also described other influences on whether they experienced momentary IWS. Participants often reflected on the scope of weight stigma experiences, and acknowledged how weight stigma may be "perceived" by them and differentiated these from overt weight stigma experiences. Participants discussed not just how weight stigma experiences made them feel in the moment, but also over time, connecting these experiences with the development of their IWS. Finally, some participants reported how their IWS had changed over time, or was changing, describing ways in which they challenged their IWS.

Overview of themes

For a thematic map, see Figure 17.

Theme one relates to participants' perceived relationships between the concepts of weight stigma, shame and IWS. This theme draws on experiences of weight stigma reported during the survey period, and other perceived and enacted experiences of weight stigma and how these made participants feel "in the moment". Participants connected experiences of momentary weight stigma with momentary experiences of weight self-stigma. Participants also connected momentary experiences of weight stigma with momentary feelings of shame. Participants perceived that their experiences of historical weight stigma and their IWS connected with their momentary experiences of perceived stigma. They also connected their IWS with their judgements of other people with excess weight.

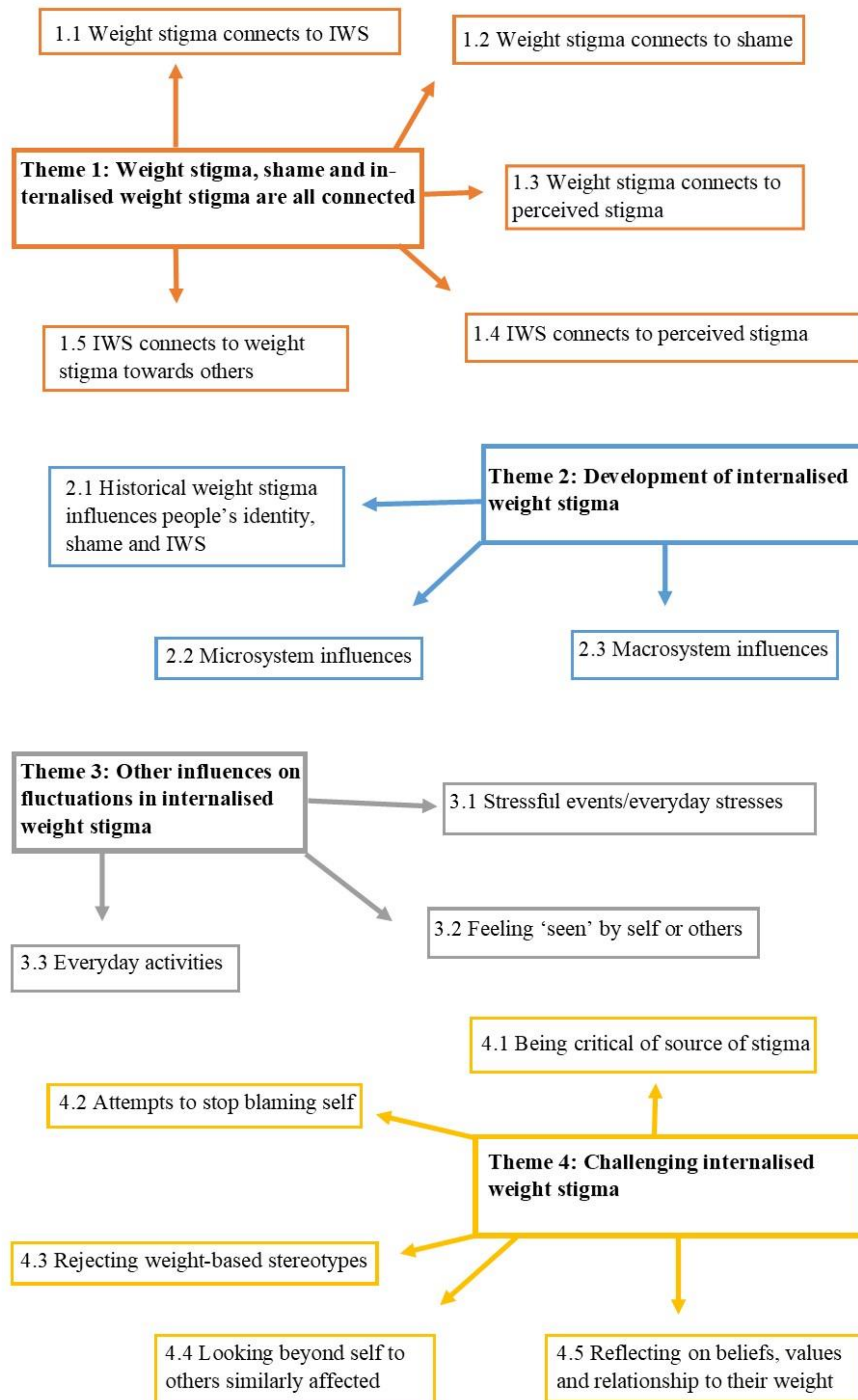
Theme two relates to the development of IWS over time. Participants reflected on how experiences of historical weight stigma influenced how they saw themselves, and contributed to their shame and IWS. Other key influences on participants' IWS were experiences with people in participants' microsystems, chiefly parents, grandparents, teachers and doctors, and how they would talk to participants about their own, the participants' or others' weight. There was also an influence from the wider macrosystem (e.g. government, society, media) which perpetuated messages about weight and weight loss.

Theme three relates to other influences on fluctuations of participants' IWS. This links to the first theme which describes how participants perceived that weight stigma connected with fluctuations in their IWS. Additionally, participants reflected on how everyday stress or stressful events may also contribute to them engaging in weight self-stigma. Participants described how feeling "seen", either by themselves (e.g. in a mirror) or by others (e.g. buying food in a shop in public) may contribute to a fluctuation in their IWS. Participants also described how doing various everyday activities (e.g. eating, going for a walk) may lead to fluctuations in their IWS.

Theme four relates to the various ways in which some participants had begun to challenge their weight self-stigma. Participants considered how being critical of the source of stigma (e.g. a parent, the government) helped them to challenge the stigmatising messages that were being conveyed to them. Participants reflected on different ways in which they had attempted to stop blaming themselves for their weight. Participants discussed how while they had an awareness of weight-based stereotypes (e.g. people with excess weight are lazy, less worthy), they were able to reflect on how they rejected these stereotypes, either by not applying these to themselves or rejecting them in their interactions with others. Participants reported on how looking beyond themselves to others similarly affected (e.g. looking to others affected by excess weight) also helped them to challenge their IWS. Finally, participants reflected on their beliefs and values when reframing how they understood weight and stigmatising messages about weight, which challenged their weight self-stigma.

Figure 17

Thematic Map



See Table 4 for an overview of which sub-themes were contributed to by each interview participant.

Table 4

Overview of Participants' Contributions to Sub-themes

Sub-theme	Ivy	June	Kim	Lola	May	Nelle	Orla	Polly
1.1 Weight stigma – IWS	X	X	X		X			X
1.2 Weight stigma – shame	X	X	X		X		X	X
1.3 Weight stigma – perceived stigma	X	X	X					
1.4 IWS – perceived stigma		X	X	X	X			X
1.5 IWS – stigma towards others			X	X				X
2.1 Historical stigma – IWS/shame/identity	X	X	X	X				X
2.2 Microsystem influences	X	X	X	X	X	X	X	X
2.3 Macrosystem influences	X	X	X			X		X
3.1 Stressful events/everyday stresses – IWS	X		X		X			X
3.2 Feeling "seen"	X	X	X	X	X	X	X	X
3.3 Everyday activities	X		X	X	X	X		X
4.1 Being critical of source	X	X				X		
4.2 Attempts to stop blaming self	X	X				X		X
4.3 Rejecting weight-based stereotypes	X	X		X	X	X		
4.4 Looking beyond self	X	X			X	X		
4.5 Reflecting on beliefs	X	X		X	X	X		

Theme 1. Weight stigma, shame and IWS are all connected

Participants described their perception of connections between perceived and actual weight stigma, shame and IWS.

1.1 Weight stigma connects to IWS

Participants discussed how experiences of weight stigma precipitated an experience of/thoughts of IWS (e.g. self-hatred, self-blame). Weight stigma, either from strangers or family members, sometimes triggered a position of agreement with what was said or intimated:

another time she was visiting, and I was wearing a pair of shorts that are shorter than I'd usually wear but I was just around the house and I thought it's just family here… she walked in and went like

[pulls a shocked face, eyebrows raised] at my legs... it was not subtle and…my first thought was oh I've got to go and get changed. I do look disgusting. I shouldn't have worn these…I felt so embarrassed, I've been walking around like this ("May")

Participants used phrases like "beating themselves up" when referring to their weight self-stigma experience. One participant described being more likely to beat themselves up following a more subtle experience of weight stigma, rather than direct nasty comments:

it's the kind of insidious comments that people make. For me, they're more harmful, because that suggests that there's a deep-rooted reasoning behind that, you know, if, if a man drives past in a car and shouts out of the window, oi fatty or whatever. That's just yeah it's upsetting and it's embarrassing, but that won't have any lasting… I mean yeah I'll remember it. But I won't go home and beat myself up about it whereas if somebody has made a comment. You know "oh I've seen you at the biscuit stand more than once today", you know, at work. That will have much more of a lasting impression on me…because it's somebody who's been watching me, somebody who's been observing my behaviours, somebody who's been judging me for going and getting more than one biscuit ("Kim")

Several participants described the experience of going shopping for clothes as stigmatising, and often experiencing IWS thoughts of self-blame:

[after clothes shopping] I feel ashamed that I've let "let myself", and I know that that's the kind of language that I would describe … it to myself, I feel ashamed I've let myself become an overweight person. ("Polly")

1.2 Weight stigma connects to shame

Participants talked about how interpersonal experiences of weight stigma were accompanied by feelings of shame, which were described directly and indirectly:

[following interpersonal weight stigma] before I would just feel really mortified and shame, I would feel shame, I'd feel embarrassed, I'd want the, the ground to open up and swallow me up and all of that stuff ("June")

[following weight stigma] I knew it was ridiculous [what person had said] but I still felt so ashamed, and humiliated. (Kim)

Participants also described how structural weight stigma was experienced with feelings of shame:

it was just so embarrassing that you couldn't fit in an ordinary plane seat. You know, cos your stomach was too big…I was ashamed by that for months and months and months ("Orla")

1.3 Weight stigma connects to perceived stigma

Participants discussed how historical enacted weight stigma contributed to experiences of ongoing felt or perceived stigma:

I feel that people are staring at me, they're probably not staring at me… I mean I have had comments over the years, I've had nasty words said… And I've had stares and stuff like that. But I think, because I've got that used to it, I now think everyone does it. I think everyone's staring at me… it's like, probably not, it's just what's been ingrained in my head over the years ("Ivy")

You always feel that when it's hot weather people are gonna look at you and think, oh, she's fat, she's going to be sweaty she's gonna smell blah blah blah. Again, a perception, but based on something that came from a real comment, you know, so you can't help but think that other people are going to think like that as well (Kim)

1.4 IWS connects to perceived stigma

Participants acknowledged how they would make assumptions that others were judgemental of their weight as they were judgemental of this themselves:

I think a lot of it was probably me feeling bad about myself and then projecting that on others. You know that because I felt crap about myself, they must be feeling that as well. (Kim)

Participants discussed being conscious of their own self-stigma and how this may have influenced how they interpreted more ambiguous situations:

I mean I think the stigma does exist, but I think it doesn't. Sometimes it's in my head, so you know, a comment that someone might make to me. They're not making necessarily with weight stigma, but I would interpret it that way if they made the same comment to a slim person, they wouldn't take that comment in the same way kind of thing so I think because I'm very conscious of I guess maybe the self-stigma that you were talking about it means that I then interpret things as stigma as well I still as I said I still think it does exist but I think I also kind of interpret things in a different way as well. (May)

1.5 IWS connects to weight stigma towards others

Participants described how they are as judgemental towards others with excess weight as they are towards themselves:

I have an internalised fat judgement; I look at those people and I look at myself. And I think, on some level, that those people are kidding themselves, that they're actually very unhealthy and it's a dangerous thing for them to be like, you know, going on about how it's great to be fat… I have a really deeply ingrained belief that it is better to be thin. (Polly)

I judge other fat people by how they dress or how they behave. And that's something that I absolutely hate about myself that I do it about other fat people... in my head, it's there that I'm thinking well why are you dressed like that?... Why do you have to draw attention to yourself like that? Why you know, why are you wearing tight fitting clothes, why are you wearing a crop top, cover it up. Oh, you know, nobody wants to see it. (Kim)

One participant seemed to indicate this weight stigma towards others only occurred when they were not affected by excess weight:

I think there has been times when you know I've been at my slimmest and I've looked at people that are overweight and, you know, it's like, ughh, you know, look how they're eating ("Lola")

Theme 2. Development of IWS

Participants talked about how various external factors, including weight stigma and societal beliefs, had contributed to their IWS.

2.1 Historical weight stigma influences people's identity, IWS and shame

Participants discussed how weight stigma over the years had shaped how they feel about themselves and contributed to their IWS and shame:

like this, this [survey] doesn't capture at all how I feel. Because right today has someone made me feel that way. No. Have I felt that way as an accumulation of 35 years of being treated a certain way. Absolutely. (June)

Many of the participants discussed how weight stigma had been experienced from an early age and how that influenced how they saw themselves, potentially connecting with their IWS now:

there have been times from being very very young where I was singled out…, as being different and had what I now recognise as being very cruel things said to me from a very young age. And I know that those things have governed or certainly contributed to how I feel about myself and how I view myself, how I deal with that shame and how I deal with that guilt about being overweight (Kim)

In particular, participants described how other people's stigmatising treatment of them affected their identity and how they saw themselves:

You know, I can't even think how I would pick it apart because there's so much of who I am. That is my personality is of course shaped by being othered… Being stigmatised is so part of who I am now. Which is a horrible thing to say, isn't it, but it's true (June)

Participants discussed how others' treatment of them affected how they behaved; either in terms of being critical of their weight, or teaching them to think their weight was shameful and should be hidden:

[because of body being stared since being young] Swimming costumes on beach – very very rarely wear a swimming costume on the beach. I always wear shorts down to my knees and things like that. (Ivy)

2.2 Microsystem influences

Participants talked about how people in their direct current or historical environment made them feel bad about their weight and contributed to their IWS and sense of shame.

In particular, participants discussed how family members, doctors or teachers had made stigmatising comments about their weight, particularly when they were younger:

[speaking to myself harshly about my weight came] from my mum and my grandmother. I feel like they can't be solely responsible, but I don't know maybe there were comments from children or something. But yeah, My mum is always on a diet and. And my grandmother just used to say horrible things to me you know, do you need to have pudding, looking at you you don't, and one time I was wearing a skirt and she got her friends to look at my legs and try to get them to laugh and that kind of thing. (May)

there's so many sources where that shame and, you know, personal disgust that I feel about myself has come from, you know, a teacher did tell me at school once that I was disgusting… And I think if, if there's one thing that has stayed with me my entire life, it's that. I still see myself as disgusting (Kim)

One participant described how comments from a family member seemed to give more credibility to what was being said as they knew the person cared about them:

It used to upset me, but part of me thought he was saying it for the right reasons, we were really close. And I think part of it, he were saying for… because he didn't want me to be ill, he wanted me to be you know, thinner. (Orla)

Similarly, participants discussed how experiencing weight stigma from doctors is harder to dismiss as they hold a position of authority:

I really don't care what other people think anymore. When it's medical professionals saying it's a bit different because you, you kind of put your trust in them to know what they're on about so it's like, part of you is like…This is real (Ivy)

One participant reflected on the impact of bystanders during a weight stigma event and how that is felt by the person:

You can't help but just assume that's because they think the same, why else wouldn't somebody say that's not okay…literally, nobody has ever done that with me [stood up for me after weight stigma], not family members, not really close friends, not friends who have never made me feel bad about myself ever, will still not say anything. So not only is it a case of, they're not wanting to protect me personally, but there is no social value in virtue… signalling either. So there's actually no social cache in going. Well, hold on, everybody. I'm a good person. I don't think they should say that (June)

Participants talked about how their family's views on weight (e.g. witnessing family members' own relationship to their weight, or their treatment of other people with excess weight) affected their IWS:

Some of my kind of most difficult memories about putting weight on are going shopping with my mum and then her commenting well you'll need a bigger size or whatever… I have a really deeply ingrained belief that it is better to be thin. Just thin, you know, I don't know if it's, you know, societal, cultural, whatever it is, but you know, my mum definitely has that belief and you know, my grandparents, my grandmother was overweight she was always on a diet as well since it's really this kind this kind of really ingrained thing. (Polly)

I know that a lot of it is, how I've now interpreted it [how have internalised weight stigma], is that my father was very scathing and very critical of fat people... for me there's lots of other things tied up around being fat, you know, it's a big family issue. And a lot of that shame and guilt did come from my dad , but also from teachers, from friends of my father's (Kim)

Some participants reflected that experiencing weight stigma from family members was the most difficult to manage, and that weight stigma is more meaningful as a consequence of the source:

And I know it sounds weird but that one's [experience of a nasty, sexually violent comment on a date] actually affected me probably less than … So comments from people I care about, so friends and family, so when they say the old you know "you're not fat you're pretty", or "you're not fat you're just cuddly..or...you're so bubbly". (May)

2.3 Macrosystem influences

Participants described an awareness of wider cultural and societal beliefs about obesity and people with excess weight, and how these have contributed to participants' IWS. Some of these wider beliefs were also perceived to be supported by the government, medical professionals and the diet industry.

Participants discussed the cultural and societal belief that weight is a choice and is under someone's control; therefore it seemed that fault or responsibility is ascribed to people with excess weight:

you get these messages from all around you that it's about a lifestyle choice and that you know even that that very phrase is used a lot isn't it by medical professionals and everything else. You're just surrounded by this idea that it's…entirely a choice. (Polly)

I'm aware that everybody else thinks it's my fault. It's entirely a choice because I hear it all the time. You hear it from the diet industry, hear it from the government (June)

One participant stated that there seems to be a social understanding that weight stigma is acceptable; this includes things said, but also what goes unsaid (i.e. when others do not say/do anything when someone experiences weight stigma):

[after weight stigma] nobody stopped to say anything, nobody, even I could tell some people around me were quite kind of like, whoa what just happened there. And seemed concerned, nobody did anything… So I was more affected by that, by the embarrassment of that, but also the realisation that oh well of course it's all right you can do what you like to fat people, that's fine. There's an agreement that, well, you know, he shouldn't have done that but look at you. What did you expect. (June)

This participant suggested why it is perceived to be socially acceptable:

It's one of the few, if not,… the only thing left that it's completely socially acceptable to stigmatise people for, isn't it… it's not just allowed, you're encouraged, because you're "helping" people. You know I've been told by people that I'm going to die. You'll die. This is why I'm telling you, you shouldn't eat that cake because you're going to die. (June)

Participants discussed an awareness of the social acceptability of people with excess weight being a subject of ridicule, which was often experienced with feelings of shame:

but somebody who I would have considered to be a good friend, suddenly in a group of people makes a fat joke, and…it's so disconcerting. And othering which I quite like, this phrase othering, because it just so exactly describes what it feels like to suddenly be metaphorically thrown out of the group (June)

Participants felt it was less acceptable to have excess weight as a female, particularly a young female, which may explain why one participant experienced less weight stigma as they grew older. An awareness of this seemed to lead to comparisons which heightened feelings of self-dislike:

just catching sight of yourself in windows or on team meetings and things like that. It is just that constant reminder that, you know, you're not an attractive woman, because of the amount of fat. (Kim)

People really really hate fat women in particular, I think, but it was much stronger when I was younger. (June)

Participants described how comparing themselves to imagined or real thinner others made them feel stigmatised and ashamed; this indicated an awareness of the Western societal belief that thinner is

healthier, thin is the ideal body weight and the stereotypes associated with what it means to have less or more weight:

it makes you feel like you're in a category that's not worthy, kind of thing. Like, if I'd have been a thinner person and I walked in that room they'd have instantly kind of judged me straight away and said oh she's quite slim she's this fit person. She obviously goes to the gym, she does this, she's good at her job and everything else, but because I'm a slightly bigger person and I walked in room, you could instantly see that they thought yeah she's going to be fat and lazy, she just sits at a desk all day. And that's the kind of feelings that I get from it. It's like they instantly, judge you, because of the way you look (Ivy)

I feel as if I've never seen so many skinny people, than when I go shopping… in my day-to-day life you know, all shapes and sizes…So again, you just feel like a complete freak. (Polly)

Theme 3. Other influences on fluctuations in IWS

Participants talked about other non-weight stigma related events which also affected their IWS.

3.1 Stressful events/everyday stresses

Participants discussed how non-weight related stressful events can contribute to fluctuations in their IWS, in that they may attribute the occurrences of these stresses to their weight:

like a stressful event, as you say, not necessarily weight related will definitely have me... Say disparaging comments about myself to myself, as if the reason it's happened is because I'm fat. (Kim)

any, like, criticism of myself or feeling as in self-criticism, sorry, or feeling cross with myself. I think I almost always will blame my weight first or the flaws that I associate my weight. So, you know, even if it was something that happened at work. I might be like oh it's because I you know I interacted in a funny way because I am self-conscious about my weight, if I could just lose weight … then I'd behave in a normal way, that kind of thing. (May)

Participants described how they attributed weight-based stereotypes to themselves when they experienced stressful events or everyday stresses:

when I get really angry with myself that I can't find things it's because I'm fat and lazy because I don't tidy up. And that's because I'm fat. You know, so, I also, I always associate, things like that together. So yeah, you know, not on the day where I've perceived weight stigma, just in my own time on my own. You know the reason that this has failed or you know whatever has happened is ultimately because I'm fat. (Kim)

While one participant (Polly) acknowledged that stressful events can increase her sensitivity to "the weight stuff", on the other hand sometimes being busy can a useful distraction for it as well:

I think when I'm stressed … it makes me less resilient to triggers but in actual fact, and I can get a bit stuck in… "drive [mode]" if that makes sense as as like a bit of a way of kind of not thinking about stuff... Now I don't know, if something, then triggers triggers me because it's a reminder, then yeah, definitely I'll go down that route, but I almost kind of don't do that on a, like a just a day-to-day basis because the stress is kind of keeping me busy. (Polly)

3.2 Feeling "seen" by self or others

Participants discussed how different situations where they feel "seen", either by themselves or others, can affect IWS, as this could lead to feelings or concerns of being judged by others or themselves. For example, participants discussed different ways in which they feel physically exposed:

I wait until no one's watching, until I climb up them little steps because I just look like a walrus trying to, getting on to that train, and it's like I wait until no one's watching, because… I think oh my god if somebody sees me they're gonna have a right laugh at me. It's things like that. Like, then I start blaming myself. And I just think, what the hell have you done to yourself to get to this state, where you can't even climb up some ladders, without getting upset (Ivy)

if I'm in a shop. If I pick something up that… say a bar of chocolate or, you know, something, something like that that obviously is not healthy. I kind of, you know, I wish there was some way where you know we didn't have to see somebody, because I feel that that person will look at me and judge me and think "well you shouldn't be having that really". It's those sort of situations. Or if… you know the type of clothes that I wear. You know, I do tend to wear looser fitting clothes, but is, is people thinking that, you know I shouldn't wear what I'm wearing. You know, are they thinking that, should I be wearing something different, or, you know, things like that that (Lola)

Participants described how seeing themselves in a mirror or other reflective surface can cause fluctuations in their IWS:

I don't mind looking at my face, but it's from the neck downwards, I feel the lumps and bumps… It's shame I think cos deep down I believe I should have the will power to lose weight and keep it off, cos it's me that's making me fat by eating the wrong foods. (Orla)

3.3 Everyday activities

Participants talked about how different everyday activities may affect their IWS. Certain activities seemed to remind participants of weight-based stereotypes or made them feel vulnerable to judgement from others; these criticisms were then applied to themselves:

[after a nap] when I wake up, I start feeling guilty about the fact that I've done nothing all day, the fact that I've been lazy and things like that. And then it's like, that kind of goes back into the loop of I start blaming myself. It's like I'm lazy and that's why I'm getting fat and things like that (Ivy)

I would have never, I wouldn't ever go for a walk on my own, I would feel like a complete fat loser, but now [I have a dog] I've got a reason to go for a walk [without thinking] people are judging me for going for a walk thinking you know look at her blah blah blah. (Kim)

Participants discussed how engaging in different eating habits has contributed to them feeling critical of themselves:

a lot of times when, when my back hurts or when, when my partner will cook a meal that's. Well, that's healthy ish but it's not. I know it's not that, that can kind of make me feel really low about myself and my weight. (Lola)

I'll overeat or whatever… I've thought oh I'm disgusting, I shouldn't be alive blah blah blah… and berate myself a lot, you know, and think I'm disgusting. (May)

Participants described how weighing themselves can lead to self-critical thoughts:

the number on the scale, was the worst thing… if I ever go over the 200 pounds mark I feel like okay I need to starve now, I just hate that number so much. So, that is one way that I still somehow I don't know I would call it verbally abuse myself, but I'm very critical of myself, when I start approaching that number. ("Nelle")

Theme 4. Challenging IWS

Participants talked about how they had noticed shifts or changes in their IWS or reactions to stigma, and reflected on what may have helped with this.

4.1 Being critical of source of stigma

Participants discussed how being critical of the sources of weight stigma, which some connected to getting older, has helped them challenge their IWS. For one participant this involved acknowledging she internalised stigmatising experiences from authority figures when she was younger, and noticing that she now no longer regarded their opinions as true:

I mean people, people are people and they're fallible and they have their opinions and just because somebody is a doctor doesn't mean that they're the smartest person in the world… I know me, I know what I'm capable of…Before I knew him [father] better…I didn't know what a not nice person he was... And then I was caring for him when he was dying of terminal cancer. And that brought out a really ugly side of him but also helps me realize that he wasn't a very nice person. And to think these things about his own child and say these things out loud. Maybe I shouldn't listen to them, you know, maybe I shouldn't take his stupid opinions to heart… it isn't the Absolute Truth (Nelle)

Another participant described how after an experience of weight stigma, they located the problem with the perpetrator of the stigma, rather than themselves, reflecting on how this has changed over time:

Couple years ago, I literally would have bawled my eyes out. And I'd have run away. And I would have put some trousers on, and I wouldn't have gone out again. Now, I mean, I gave her it back… it left me feeling like there is no there's no filter with some people… they will just literally say anything… little bit of me that felt proud of myself, cos I didn't run off and put trousers on and want to go home and things like that. I am getting better at managing it as I'm getting older kind of thing. So I'm kind of proud of that fact in a weird way. (Ivy)

4.2 Attempts to stop blaming self

One participant shared how their experiences with diets and the diet or weight management industry has made them realise that diets do not work, or that they do not connect with explanations of why people put on weight, which has helped them challenge the belief that they are to blame for their weight, thereby challenging their IWS.

I hate the phrase lifestyle choice when it comes to overeating and. But I don't think that there is anything I can do to change it. Because I've tried for over 30 years. And every time it works to lose weight, I put on more weight and that's an absolute pattern (June)

Participants discussed their belief that other things have contributed to their weight (e.g. a health condition, society, food industry) which has helped them challenge the belief that they alone are at fault for their weight, challenging their IWS:

[weight self-stigma] got better to the sense that I understand it more now. When I were 13, 14 year old, I didn't know I'd got all these problems with my legs and things like that. I just saw myself as being a fat kid, that were it… then I got, I finally got answers as to why my legs were so big and things like that so that it kind of went back the other way a little bit like I felt a bit of relief, knowing that it's not completely all my fault and there is something wrong (Ivy)

[exploring whether I have health conditions and being diagnosed with hypothyroidism] helped me realise that, for the most part, I don't think it's my fault. If I'm exercising and I'm dieting and still nothing's happening, and I don't think it's my fault (Nelle)

Participants reflected on how they have realised over time they cannot change what others think so they care less about their judgements and have less self-blame:

what tends to go through my head now if I see somebody on telly making fat joke or some kid says something to me in the street or something is I just think it will change in the future, because I know

that this, that there is very little I can do about it. So that's where the self-blame has just disappeared. (June)

Despite an awareness of other factors which are likely contributing to their weight and efforts to stop blaming themselves as a result, participants reflected on finding this hard:

[after being diagnosed with a health condition] I felt a bit of relief, knowing that it's not completely all my fault and there is something wrong. But then, I do have these dips where I think, well, it is partly your fault, because none of this would have happened if you'd just not put lots of weight on. (Ivy)

I actively choose not to diet now because I don't think it works, but there's still that kind of niggling part of me that's like oh you're choosing to be obese. (Polly)

4.3 Rejecting weight-based stereotypes

Participants discussed how through self-reflection they have rejected weight-based stereotypes and challenged IWS.

just lots of different things of putting stuff together and thinking well I'm not greedy in other any other aspects of my life, I'm not a grasping person. I'm not kind of stupid or lazy… if it was just a complete lack of self-discipline. I wouldn't be the person I was… I probably know more about the nutrition of food than, you know, almost anyone in the street because I've spent my whole life studying it inadvertently so it's like well it's not a lack of knowledge, so you can't help but then come through the other side and go, well then it's not me. Because if I can't work it out, and I've now become an expert in this area. Then, it isn't me. (June)

I used to just think it was because I was lazy and greedy that I was overweight, and that it was a personality flaw. And so, so then there wasn't much of a you know account in my internal dialogue, there wasn't much of a counter balancing argument, it was just self-hatred (May)

I don't want to be overweight. but I also am intelligent enough to know that that doesn't reflect on who I am inside. And, you know, I don't feel worthless I don't feel less important than anybody else (Lola)

Participants also discussed how they rejected expectations or stereotypes which have been put on them:

when I go to doctors and things like that, that instantly, cos they see you know 18 stone on paper it's like you're instantly you're massively obese, you can't run, you can't do this, you can't do that, you're so unhealthy, you're gonna die soon it's things like that, that get to me most, and it's like yeah I'm overweight, but I'm not unhealthy with it if that makes sense. (Ivy)

Participants talked about how they have rejected weight-based stereotypes in their interactions with others:

I've got friends that I've had for years, when we've never had the conversation about my size, my weight, nothing at all. Ever. And you kind of fool yourself in some ways of thinking well if I don't say anything if I laugh along [to fat jokes] no one will notice. And I guess the difference now is, I know everyone will notice, and I'm no longer going to be complicit in covering it up (June)

somebody called me bubbly the other day, so as I said I'm working on being a little bit more assertive, I said "have you ever called a slim person bubbly" and they were like "no, actually, I haven't"… we had a really good conversation about it. And she said, um, yeah, I think I, and everyone else just use it as code for chubby and I said, I think you do, so maybe you should think about who you're calling bubbly in the future, so comments, little things like that. (May)

4.4 Looking beyond themselves to others similarly affected

Participants discussed how they have compared themselves positively with others who share similar struggles which has helped them to challenge IWS and be more compassionate to themselves.

Cos there's women bigger than me walking around, that really just don't care. I've seen women walking who are around four or five times bigger than me and they just do not care, at all, they live their life, they're quite happy with it and I kind of look up to them in a way and I think I want to be like that, they just don't care either, so I say, I'm going to be like that… I think other people are doing it, so I'll be all right (Ivy)

I used to kind of sneer at body positive influencers and self-help, that kind of thing. then I thought you know what, I will start following some on Instagram. And actually I have found it really helpful in that, I mean I still find some of it a bit glib. But just seeing people with bigger bodies. Being positive, enjoying themselves has I think it has. Yeah, sunk in and some of their rhetoric as well I find myself using when I'm trying to have like positive self-talk so actually, I shouldn't have sneered, it's actually been really helpful (May)

4.5 Reflecting on their beliefs, values and relationship to their weight

Participants reflected on realisations about their relationship with their weight and their values, which has helped them to challenge IWS and be nicer to themselves.

Two participants recognised that they do not judge others' worth on their body weight, so they strive not to do for this for themselves:

I didn't feel that way about other fat people, you know, I don't see their value from the size or the space that they take up (May)

These participants also reflected on how self-hatred does not serve them, which has encouraged them to be kinder towards themselves:

I found my diary for when I was 10. So I was a healthy 10-year-old, active and in my diary I'd written, and I'm so fat. It's why I have no friends and I'm so lonely, and pretty much throughout…well, I'm 31 now. So last 20 years, I've been you know berating myself blaming feelings of loneliness on being overweight and I just thought, you know, I don't want to waste any more time thinking like that, I'd like to lose weight, I'd like to be slimmer, but I don't want to waste any more of my life. Feeling like that so I think I try and push myself to the self-compassion more as well, because of that. (May)

One participant talked about how they have come to accept themselves which has helped them to challenge their previous feelings of self-blame:

I try not to use the word blame, but there's so much blame out there. Yeah blame, I don't blame myself like I did, which doesn't mean I don't still try and lose weight and it doesn't mean that I wouldn't still love to lose weight and you know so it's not it's not an acceptance of being overweight, it's more an acceptance that that is who I am. (June)

Discussion

Summary of results

This study aimed to explore experiences of shame and internalised weight stigma in response to external weight stigma in people affected by excess weight. It also explored shame and IWS in response to non-weight based stressful and neutral events, as well as investigating other factors which may be associated with the relationship between weight stigma and IWS.

In this sample of women living with obesity in the UK, experiences of weight stigma were common, with all participants reporting a variety of types of weight stigma events. The participants reported between six and 21 weight stigma events; an average of 11.13 weight stigma events per participant. The frequency and types of weight stigma reported in this study are comparable to another study with a two-week study period (Vartanian et al., 2014).

All eight participants reported experiencing personal reminders about their weight. Among the participants, self-reported IWS and shame were generally high. It is a common theory that psychological constructs which are fairly stable over time and situation may be said to be trait-like, while others which are more variable over time and situation may be more state-like (Chen, Gully, Whiteman & Kilcullen, 2000). For three participants there was evidence of some fluctuation of these experiences day-to-day (those these fluctuations were quite limited in the range of scores over the survey period), suggestive of capturing state shame and IWS. For three participants, there was little to no variation in their IWS scores, for one participant there was little variation in her shame scores, and for one participant there was little variation in either her IWS and shame scores. For these participants it is suggestive of capturing trait IWS and/or shame. Therefore, in regards to whether IWS may be trait- or state-like, there is evidence that it can be either in different individuals and that it may have a dual state-trait nature similar to personality characteristics (Zuroff et al., 2016).

The daily survey data for these participants did not support a momentary relationship between shame and IWS. While some of the survey data did point to a variation in shame and IWS responses according to event type, specifically that these tended to increase in relation to weight stigma, this finding is limited. Not all participants recorded shame and IWS in relation to all event types which restricted the analyses. Moreover, fluctuations were small. Therefore, the survey data did not convincingly support a relationship between weight stigma, shame and IWS.

In contrast, qualitative data suggested participants perceived that IWS and shame increased in relation to weight stigma, both in the moment and over time. Participants perceived that IWS may increase in

response to everyday stresses or non-weight based stressful events. Other factors which influenced the relationship between external weight stigma and IWS were also identified. The degree to which weight stigma had shaped a person's identity, contextual factors related to the weight stigma event (e.g. source of stigma) as well as personal factors (e.g. age, gender, age of excess weight onset, personal ability to challenge stigma) were discussed by participants as affecting the relationship between weight stigma and IWS; that is these factors influenced whether or not participants were more or less likely to internalise weight stigma.

Relationship between weight stigma, shame and IWS

The quantitative data in this study did not find consistent evidence of a momentary relationship between weight stigma, IWS and shame. However, other EMA studies have found that weight stigma is associated with increased momentary negative affect, including shame (Carels et al., 2017, Vartanian et al., 2018) and that IWS is related to more negative affect including shame (Carels et al., 2019). Failure to find evidence of a relationship in this study does not conflict with these findings, but rather may reflect differences in methodology. These studies used bigger samples, increased number of data points and different measures of IWS and shame. This study was not able to use multilevel modelling analysis as with previous EMA studies, and relied on a smaller sample with fewer data points, which limits the conclusions that can be drawn from the survey data.

In contrast, in the interviews participants described clear connections between weight stigma, IWS and shame both in the moment and over time through repeated experiences of weight stigma. Weight stigma came directly in the form of comments from family, friends, teachers, colleagues, medical professionals, strangers and through messages in wider culture. Weight stigma was also present in the everyday environment (e.g. lack of clothes in larger sizes, or sufficient space or seatbelts on transport). Participants reflected on weight stigma events during the survey period and other memorable experiences of weight stigma. Most participants discussed how these experiences could lead them to "berate" themselves; this involved agreeing with the implicit message or stereotypes conveyed in the encounter (e.g. that they should not wear certain clothes, be in certain places, they were to blame for their higher weight, or should cover up their bodies); this may be the process of engaging in IWS. In their descriptions of how they felt following weight stigma, shame (and other self-conscious emotions such as humiliation, guilt and embarrassment) were often named.

In line with this study's qualitative findings, based on her interviews with people living with obesity, Ueland (2020) intimated a relationship between weight stigma, IWS and shame, concluding the devaluing voice from society and immediate others can lead to IWS. As in this study, IWS was reflected in the way some participants talked about themselves, internalising the weight-based stereotypes that people with excess weight are "stupid, less gifted, unsuccessful, failures" (Ueland,

2020, p. 10). IWS was also reflected in an awareness of having a body size that deviates from the preferred Western norm (i.e. thin), thereby seeing themselves as having a “devalued social identity” (Ueland, 2020, p. 10). Ueland suggested that this internalised stigma can then “crystallise into shame processes” (Ueland, 2020, p. 14).

A relationship between weight stigma, shame and IWS is supported by Gilbert’s shame model (2002). This proposes that personal experiences of stigma prompt an external shame response, with the person aware that they are unattractive or undesirable (e.g. physically, characteristically) in the mind of another. Gilbert’s model draws on evolutionary psychology and attachment theory to describe the function of shame and how it is an evolved self-conscious emotion in response to social threat, such as stigma. From birth through to older adulthood, our survival relies on others in various ways, and requires feeling safe in our close and wider social groups. This prompts motivations to “fit in”, belong, connect and seek validation (Gilbert, 2003). Thus, experiences of weight stigma may stimulate thoughts, feelings, sensations for a person that they exist negatively in the mind of another (e.g. undesirable, unworthy), and is therefore at risk of being (or may actually be) excluded from the group, avoided, rejected, giving rise to an experience which threatens our innate need to belong and feel safe. In support of this, some participants commented on how living with excess weight and experiencing weight stigma could sometimes make them feel isolated from friends, colleagues, or society in general. Applying this model, shame is still acknowledged as a deeply uncomfortable experience, but also framed as a natural response evolved from an intrinsic instinct to belong in order to survive. This may also explain why some weight stigma events were so impactful for participants and why the shame experienced as a result of the weight stigma has stayed with them, as these experiences may have threatened participants’ sense of belonging and safety. Finally, the shame model may also account for the bystander effect discussed by one participant when experiencing explicit interpersonal weight stigma. Other people witnessing weight stigma towards others may be prompted towards apathy as it is a less threatening position to take the perceived view of the majority.

Participants in this study did not directly reflect on shame connecting with IWS; rather participants often alluded to shame when discussing IWS. Notwithstanding the definitional concerns of IWS (Austen et al., 2021; Meadows & Higgs, 2020) it is likely that shame is a facet of this construct (Meadows & Higgs, 2019; Palmeira et al., 2016), particularly as shame may be the overwhelming emotion experienced with stigma (Luoma & Platt, 2015). However, shame was not named in a recent qualitative study exploring IWS in people’s everyday lives (Davidsen et al., 2023) though it may be inferred from themes participants discussed like self-blame and bodily devaluation, particularly as shame can be a difficult emotion to discuss with others (Dolezal & Gibson, 2022).

This thesis conceptualised IWS as a cognitive process of inner shaming, which the shame model proposes is a defence to external shame elicited when we feel devalued by others. Gilbert proposes

that internalised shame occurs when a person identifies with the mind of the "other", leading to self-devaluation; self-devaluation being a facet of IWS (Corrigan et al., 2009; Davidsen et al., 2023; Meadows, 2017; Rubino et al., 2020). Therefore, the model suggested that IWS may occur as a defence in response to weight stigma and (external) shame. Participants in this study did not directly comment on perceiving their IWS as a "defence" to shame and weight stigma. Nevertheless, for some participants, beliefs and processes related to IWS did seem to "show up" more following weight stigma and shame. After experiencing weight stigma, participants described feelings of shame (also described as feeling unworthy, self-conscious, isolated, self-disgust, othered, a desire to hide) and IWS (described as beating oneself up, self-hatred, disappointment in oneself, self-blame, applying negative weight-based stereotypes to the self, comparing the self with thinner others, a fixed belief it is better to be thin and a feeling of failure or disappointment they are not).

The proposition that IWS may be a defence to weight stigma may only relate to particular types of weight stigma. Carels et al (2017) reported that "negative self-talk" was a common coping response to IWS (defined as "upsetting internal experiences or personal reminders about weight"). However, participants who reported external or overt weight stigma did not report any use of negative self-talk. Given the definition of IWS involves self-devaluation, which often involves negative self-talk, it is possible that "negative self-talk" as measured in this study was capturing weight-based self-devaluation, i.e. a facet of IWS. Thus, it may be that IWS or negative self-talk is less likely when people experience certain types of weight stigma (i.e. overt weight stigma), but other more insidious, subtle types of weight stigma (i.e. "upsetting internal experiences or personal reminders about weight") are more triggering. This links to the participants' discussion of shame and IWS in the current study when experiencing environmental weight stigma (e.g. a participant not fitting in an aeroplane seat, participants struggling to find clothes they want in their size), seeing their reflection, or interpersonal encounters where participants pondered the implications of certain comments, non-verbal communication (e.g. facial expressions, stares) or how to manage "fat jokes" or negative comments about "other" people with excess weight. Such encounters may be termed "microaggressions" (Sue et al., 2007) and like racial microaggressions, weight-based microaggressions (i.e. a type of weight-based stigma) can be the most detrimental as these can occur every day, are hard to avoid and are more subtle. That these experiences are less direct can make them more difficult to respond to, and instead may be more likely to be internalised and intensified with feelings of self-blame and shame (Lewis et al., 2011). This concords with reflections made by some participants that direct nasty comments can be more easily dismissed or they could locate blame or fault with the perpetrator, while more insidious forms of weight stigma are more likely to play on their mind. As subtle forms of weight stigma might be more likely to be internalised and associated with shame and self-blame, this could be why some people find these types of weight stigma the most detrimental to health and wellbeing (Lewis et al., 2011).

Development of IWS

The qualitative data suggested not just a perceived contemporaneous relationship between weight stigma, shame and IWS, but also a relationship over time (sub-theme 2.1). Participants described how historical weight stigma influenced their identity and the development of their IWS and shame over time, often starting with early stigmatising experiences in childhood. This was often reflected in how weight stigma influenced their identity, which in turn affected their shame and IWS. Some participants also talked about how they continue to "carry" shame and guilt from historical experiences of weight stigma. Three participants discussed how their IWS meant they held stigmatising views about others affected by excess weight.

Weight stigma occurred beyond participants' personal systems and these experiences also influenced their IWS (sub-theme 2.3). Messages from the government, media and diet industry were experienced as stigmatising by the participants, and seemed to be internalised chiefly as a belief that excess weight is a choice and a matter of personal control, and that "thinner is better". Having a belief that thinner bodies are more attractive while also being of a higher weight is associated with having a higher IWS and may be due to the disparity between the size a person is and the size they would like to be (Stewart & Ogden, 2021a); a conclusion supported by the finding that treatment-seeking samples of people with excess weight tend to have higher levels of IWS (Pearl et al., 2019). Moreover, in interviews with participants of a higher weight, people often reflected on the societal pressure to be thin, perceiving social rejection as they did not conform with this beauty ideal, as well as being judged by society for their bodies and what they eat (Gerend et al., 2021; Ueland et al., 2019). However, as a part of society themselves participants find it difficult separate themselves from society's judgements about people with excess weight (Ueland et al., 2019), meaning these judgements may be more likely to become internalised, as manifest in IWS. As suggested by Pearl et al (2018), there may be a compounding effect of weight stigma experienced from different sources, in different settings from an individual to societal level, meaning it is harder to ignore or dismiss the message conveyed in the stigma, which may increase the likelihood of internalising their content. The suggestion of a cumulative effect of weight stigma on IWS is supported in the literature: individuals with a history of more frequent lifetime experiences of weight stigma are more likely to have higher IWS (Carels et al., 2017; Pearl et al., 2018; Pearl et al., 2019; Puhl et al., 2018), with stigmatising experiences reported from various situations.

Perceived weight stigma and IWS

While it may be harder to dismiss weight stigma experienced from various sources, settings and across the lifespan, contributing to internalisation of weight stigma, an alternative explanation is that people with higher IWS may be more likely to perceive weight-based stigma from others and in different guises (Puhl et al., 2008).

“Perceived” or “felt” stigma (as opposed to “enacted” or “actual” stigma) was reflected on by many of the participants. They described “perceiving” weight stigma in the course of their everyday lives, typically when doing activities where they felt “seen” or “exposed” (e.g. shopping, climbing stairs) participants imagined their bodies being seen and devalued by others. Many of the participants were able to clearly distinguish between the “actual” and “perceived” stigma as well as a grey area between the two, which were typically ambiguous interpersonal situations.

In their discussion of perceived stigma, participants imagined others judging them for their appearance or behaviour (e.g. buying chocolate), which could then be accompanied by self-judgement. In this way, not just enacted but also perceived acts of weight stigma were associated with shame and IWS. Similarly, in another study, when asked about their experience of living with obesity or weight-based stigma, participants perceived themselves as constantly being observed and devalued by others for their bodies, what they eat and how they moved (Lewis et al., 2011; Pila et al., 2018; Ueland et al., 2019).

However, it seemed the current participants did not even need the presence of others in order for them to imagine what others would think of them. In private, participants reported seeing themselves in a reflection could also lead to self-devaluation, suggesting the extent to which they had internalised the views of others and society. This is supported by the finding in Vartanian et al (2014) that only approximately half of the weight stigma events reported occurred with others present.

It may be possible that there are bi-directional relationships between enacted weight stigma, IWS and perceived weight stigma. Participants described how previously enacted weight stigma connected to their perceptions of weight stigma: perceptions of weight stigma could be based on specific historical comments or experiences, so participants generalised these stigmatising experiences to others. Similarly, participants described how their IWS connected to perceived stigma, either by projecting their thoughts about themselves onto others, or because their self-stigma thoughts “coloured” the interpretation of more ambiguous interpersonal situations, which participants then experienced as stigmatising, or left participants trying to make sense of.

A tendency to interpret ambiguous interpersonal situations as weight stigma, or anticipate weight stigma, may be consistent with how people have experienced themselves in the minds of others previously, with previous weight stigma events likely experienced as a social threat. The threat-protection system which is activated when experiencing shame and stigma, has evolved to operate on a “better safe than sorry” principle to ensure safety (Gilbert, 1998b); so these interpretations of ambiguous situations may be conceptualised as a protection-safety strategy. Similarly, the formulation model for IWS suggests that, after experiencing weight stigma, people may make overgeneralised predictions about how others may treat them in the future and may misinterpret ambiguous social and

environmental cues (Ratcliffe & Ellison, 2015), which also may be framed as a protection-safety strategy.

Relationship between non-weight based stressful events, shame and IWS

This thesis theorised that experiencing stressful events or everyday stresses may mean people are operating from their threat system, increasing their vulnerability to engaging in IWS. Therefore, when people experienced non-weight based stressful events, there would be an increase in IWS scores. This was not supported by the quantitative findings due to limited data reported following stressful events. However, the qualitative findings suggested that for some participants IWS did increase in relation to non-weight based stressful events. Some participants discussed how stressful events, such as misplacing things or interactions at work, may be self-attributed to their higher weight and the application of weight-based stereotypes. Moreover, for some participants not just non-weight based stressful events, but also everyday self-care activities (e.g. taking a nap, going for a walk) lead to applications of negative weight-based stereotypes leading to self-devaluation about weight.

Other qualitative studies have found that people with excess weight may be more likely to attribute non-weight based events or everyday occurrences to their weight (Gerend et al., 2021; Lewis et al., 2011). For example, participants believed that the reason why they were not invited somewhere by friends (Lewis et al., 2011), or were not given a certain position at work (Gerend et al., 2021) was because of their weight, although this was not directly stated by others. Thus, ambiguous social events which have no known relationship to weight, people may attribute to negative beliefs about their excess weight. This may in part be because of historical experiences of weight stigma, as well as people's own weight self-stigma and their expectation they will be mistreated because of their weight. In an experimental study, participants with higher weight who reported more instances of daily weight stigma were more likely to attribute a negative social evaluation based on unknown factors to their weight (Gerend, Sutin, Terracciano & Maner, 2020). However, the instances described in these studies were all relational, while some of the non-weight based stressful events which participants described in this study were private as well. This suggests the attributional style/appraisal process affects people beyond ambiguous interpersonal situations; additionally it can be any situation or event that goes "wrong" people may attribute to having a higher weight.

The hypothesis that previous weight stigma experiences can influence a person's attributional style such that they attribute non-weight based stressful events to their weight may be explained by the expanded version of the shame model (de Matos, 2018). Shame memories (or experiences of weight stigma in this case) can come to influence a person's attribution style and self-narrative. Stigma events can give "texture" to experiencing the self as worthless, unlovable or bad (de Matos, 2018,

Gilbert, 2002) which sensitises people's emotional and cognitive processing systems which may then bias their interpretation of everyday events.

Factors which may influence the relationship between weight stigma and IWS

Weight stigma, identity and IWS

One idea suggested by this study and supported in the literature is that weight-based stigma can affect people's identity which makes them vulnerable to IWS; people are aware that they have a socially devalued identity, may view themselves as belonging to a stigmatised group and may devalue themselves as others may (Ratcliffe & Ellison, 2015). In a qualitative study (Lewis et al., 2011), participants reflected on similar connections between weight stigma and identity. They remarked that having obesity came with assumptions from others about a person's character (e.g. they were lazy) and that they continued to be affected by obesity due to flaws in their character (they were weak or had poor willpower). They were also aware of not fitting the cultural Western ideal of beauty, which also affected how they saw and expressed themselves.

Weight stigma context and IWS

This study's qualitative findings suggest that source of weight stigma is important to the development of IWS. In particular when historical weight stigma was experienced from close others (e.g. their parents, children) or powerful others (e.g. doctors, teachers) in their microsystem, these experiences seemed to be especially impactful, with participants perceiving these stigma experiences as having more credibility. For some participants, a general unacceptability of having a higher weight had been witnessed in their families growing up. These familial beliefs had then been internalised and applied to themselves; some participants applied these judgements to other people with excess weight too.

Cross-sectional studies support the finding that weight stigma enacted from close others is important to the development of IWS. In one study, weight stigma experiences from family (and work) predicted greater IWS (Pearl et al., 2018). This study also found that having a mother with a higher BMI may be a protective factor against IWS, a supposition not supported in this study. Indeed some of the participants indicated the opposite; that having a mother with a higher weight had been difficult and influenced their (negative) beliefs about weight, leading to IWS. Thus, it may depend on how a mother with a higher body weight relates to herself and her weight; modelling self-acceptance, compassion and love as opposed to self-criticism or hatred which may influence if somebody internalises weight-based stigma.

Furthermore, in a qualitative study, participants cited mothers and partners as particularly significant sources of weight stigma in childhood and adulthood respectively (Lawrence et al., 2022). They

recalled family-based weight stigma across the lifespan, but in particular noted more experiences in childhood which had left a lasting and distressing impression on them. Participants conveyed the impact these experiences had on them, including the development of their weight self-stigma. Another cross-sectional study found experiencing weight stigma from various interpersonal sources (including family, friends, workplace, healthcare and community) was associated with higher IWS (Pearl et al., 2019), which supports the idea of close others in a person's microsystem, beyond family, influencing the development of IWS (sub-theme 2.2).

Memorable weight stigma experiences described by participants typically involved parent-child, doctor-patient, teacher-student, government-society dynamics, with power typically held by the perpetrator of weight stigma, which may explain why some weight stigma experiences may be more likely to be internalised. Internalised shame processes such as self-blame and self-devaluation defences are seen as a form of submissiveness (Gilbert, 1998a; Gilbert & Irons, 2009), which may be safer than externalising defence strategies (e.g. anger or retaliation). Therefore, power dynamics between the source and receiver of weight stigma may influence the extent to which weight stigma may be internalised.

This study suggests that experiences of weight stigma when younger may also be key in the development of IWS. All eight participants were affected by excess weight from younger, formative years (between the ages of four and 18 years old), and many reflected on memorable experiences of weight stigma when young which seemed to influence their IWS. This is supported by quantitative and qualitative studies. Using two measures of IWS, younger age of overweight onset was associated with higher IWS (Pearl et al 2019); it may be presumed that this is because being of a higher weight made it more likely they then experienced weight stigma. In interviews with women aged 50 to 65 who self-identified as having a "lifetime of body image concerns", one theme reflected the enduring impact of weight stigma (Pila et al., 2018). In particular, comments made about their weight when they were younger they felt reinforced the "internalisation of the importance of weight and [set] the stage for continued weight stigmatisation [which]…shaped their self-perceptions in adulthood" (Pila et al., 2018, p. 169). This is supported by the current participants who had similar poignant instances of weight stigma in their early years which they felt shaped how they saw themselves.

Personal factors, weight stigma and IWS

As previously discussed, all participants were affected by excess weight from childhood or adolescence, and many reflected on early stigmatising experiences as particularly impacting their identity and self-stigma about their weight. In support of this, having a young age of excess weight onset is associated with higher levels of IWS (Pearl et al., 2019) and may be a personal factor in influencing the relationship between weight stigma and IWS.

While formal quantitative analyses were not possible, the qualitative data suggested age and gender may be personal risk factors for experiencing weight stigma and IWS; that is that younger women affected by excess weight experience more weight stigma and IWS. This is supported by the literature. Younger people and women with higher BMIs report more weight stigma than older adults or men of a similar weight (e.g. Puhl et al., 2008); and there is substantial evidence that women are disproportionately affected by weight stigma across life domains (e.g. employment, education, romantic relationships) which affects their opportunities and quality of life (Fikkan & Rothblum, 2012). Similarly, younger individuals and women with higher BMIs have increased IWS (Pearl et al., 2019).

An alternative conclusion is not just that weight stigma reduces with age (e.g. Puhl et al., 2008) due to less of a societal pressure to be thin, but also people find more ways of coping with overt stigma. This idea was supported by comments from some participants who felt their coping had improved with age, though this was not true for everyone. This is supported by qualitative findings that for some people tolerating, ignoring or dismissing weight stigma may get easier with age and experience (Gerend et al., 2021), or people may be more likely to respond and "fight back" to protect their self-worth (Lewis et al., 2011).

Coping with weight stigma in various ways was reflected on by participants: while participants described experiencing shame and IWS as related to weight stigma, these were not fixed, unquestionable responses for all. Some participants described ways in which they had begun to challenge their IWS, such as being critical of the source of the stigma, or the message which was conveyed, such that they were no longer internalising weight stigma. This is not to say they did not find these experiences stigmatising or upsetting, but rather some participants were finding ways in which to limit or overcome the extent to which these weight stigma experiences were internalised by them, or led to a shame response.

In support of these ways of challenging IWS, perceiving societal weight stigma as illegitimate was higher in a sub-group of people with excess weight who tended towards resisting weight stigma (as opposed to internalising it, or indifference; Meadows & Higgs, 2022). Within the shame literature, Gilbert (2002) theorised that for people to internalise stigma (associated with internal shaming), they must see the judging "other" as having the right, skill or power to judge them as they do; they must see the judging other as "legitimate". He hypothesises that if legitimacy to judge the self is something which can be given to another, it can also be refused. Thus, it may be that participants who are critical of the source of stigma may be declining judging others' legitimacy over them. By extension of this idea, participants seemed to not only challenge the legitimacy of the source of the stigma, but they also refuted the message conveyed in the stigma. Theoretically, if the source of the stigma holds no legitimacy or power over an individual, what that source says will not hold any power or value either.

Strengths and limitations

There is limited qualitative research on IWS, with few studies exploring the relationship between weight stigma and IWS. This is the first study to use data-prompted interviews to explore this topic. DPIs allow researchers to use different sources of data to stimulate rich discussion, for example, participants can explore and integrate the data into their experiences and narrative (Kwasnicka et al., 2015). This is the first study using a U.K. sample to explore IWS, and to capture everyday weight stigma experiences using a daily survey approach which may more accurately reflect the frequency of these experiences. PPI consultants informed the study design and procedural decisions which can improve the acceptability, quality and relevance of the research (Hoddinott et al., 2018). There was good engagement from the participants who provided a considerable amount of quantitative and qualitative data. The opportunity to understand participants' survey data in the interviews added richness and clarity to the observed themes and patterns in the data.

While not a diverse sample in terms of gender or ethnicity (all female and White), there was a mixture of participants seeking weight-loss treatment and those not. Research suggests that that people seeking weight-loss treatment have higher IWS in comparison with the general population (Pearl et al., 2019) but may be less likely to report weight stigma (Carels et al., 2017). This sample, regardless of whether weight-loss treatment seeking or not, had high IWS and all participants reported experiencing weight stigma in their day-to-day lives. The sample was diverse in regards to neurodiversity, age and years affected by excess weight, highlighting the range of people weight stigma, IWS and shame can affect.

Recruitment was challenging and the small number of participants prevented more complex analyses of the quantitative survey data. This may be due to the sensitivity and discomfort of speaking about the topic (the tag line of the advert used was "do other people or things in your life often make you feel bad about your weight?"). If this did affect recruitment, there is a potential bias in the sample.

There was not enough quantitative data in response to the three event types to make any meaningful comparisons. In case series designs, the researcher typically aims for experimental control over the independent variable (i.e. event type), but this was not the case in this study, therefore a cautious approach was taken to interpreting the visual data. Moreover, the data was limited in that it appears that the IWS measure was capturing this construct as trait-like for some participants, meaning it would be unlikely to see much variation across events. While visual analysis is widely used in single-case studies, concerns regarding consistency (or reliability), sensitivity and specificity are often cited (Bulté & Onghena, 2012). Visual analysis is regarded as more conservative and less sensitive than statistical analysis (Kazdin, 2011). This may mean small effects or trends in this data i.e. patterns in fluctuations between shame and IWS were not observed. The limitations to visual analysis may in part

account for why there does not seem to be a momentary relationship between shame and IWS, but both appear to increase in response to weight stigma.

A further limitation relates to the representativeness of people's experiences; data was collected from June 2021 to January 2022 when Covid-19 was still affecting society and how much people went out, thereby potentially not representing a person's typical day-to-day experience of weight stigma, IWS and shame. While none of the participants reported to be shielding due to the pandemic, some did report in general that they were engaging in less social activity due to the restrictions at the time, with one participant stating that the study period did not reflect her usual experiences as a person affected by obesity. Therefore, there may have been an under-reporting of weight stigma experiences simply because people were interacting less with the world and others. Nevertheless, the participants (n = 8) reported between six and 21 weight stigma events; an average of 11.13 weight stigma events per participant which is comparable to some other studies (e.g. Seacat et al., 2014, Vartanian et al., 2014; 2018).

Due to the development of the study's design there were time lapses between survey data collection and personal interview. Some participants were not able to recall in interview the context and details of weight stigma, IWS and shame which they had captured in their survey data, thereby limiting the depth of description of these experiences. Participant feedback indicated an open text box may have been useful to capture these details and prompt their memory. Other studies (Kwasnicka et al., 2015) have also encouraged participants to collect other forms of data (e.g. photos) to prompt reflection and discussion which may have led to richer discussion.

A final limitation to this study is the measurements used. There is currently no universally agreed sufficient measure of IWS that captures its multidimensional nature. The measure used here was chosen as it was possible to use a sub-scale of a known measure (self-devaluation sub-scale of WSSQ; Lillis et al., 2010) in order to reduce participant burden and self-devaluation mapped onto the original shame model. However, use of this measure may have limited the findings. Firstly, fear of enacted stigma (the other sub-scale of WSSQ) was not used in the daily surveys. While participants discussed this concept in the interviews, it was not possible to support this finding with the quantitative data. Secondly, as this measure was only a sub-scale with a Likert scale of one to five, it was not possible to capture much day-to-day variation which may have led to a ceiling effect in the survey data.

Research implications

It was originally intended that this study would collect larger amounts of EMA data and use multilevel modelling analysis to test whether IWS and shame varied in response to weight stigma, and whether certain constructs measured at baseline affected the reporting of weight stigma, IWS and shame. Conducting such a study as originally intended may still helpfully contribute to the wider

literature. In particular, being able to test whether participants' baseline self-criticism and self-compassion effected the relationship between weight stigma, IWS and shame, as well as measuring internal and external shame in the daily surveys. Working in partnership with tier two weight services was helpful for recruitment and a longer data collection period (or connecting with other regional services) would have allowed for more people to participate in the study.

For the majority of participants there was evidence of some variation in their daily quantitative IWS scores. Similarly, other EMA studies have found within-person variation in IWS day-to-day (Carels et al., 2017; 2019; Seacat et al., 2014). These studies suggest that IWS can fluctuate in relation to other variables (e.g. mood) and while this study did not find convincing quantitative data to support the hypothesis that IWS fluctuated according to weight stigma, future studies could explore which further variables co-vary with IWS. Furthermore, longitudinal studies which explore development of IWS and other covariables across the lifespan may help to understand IWS and it would be interesting to understand why IWS can present as a trait- or state- like construct with different individuals.

Williams and Annandale (2019) propose that IWS research is limited as it is largely "disembodied", with a need to understand both "how" and "in what ways [IWS] 'gets under the skin'" (Williams & Annandale, 2019, p. 1). They believe there is a need for research to better understand how the social (weight stigma) comes to have tangible implications for health and wellbeing. They further suggest that the current understanding of IWS in the literature is limited as it defines and analyses it as a largely cognitive process. The shame model may provide direction in this regard. As a biopsychosocial model, the model could be a starting point in guiding the research in this field and linking up the psychological, social and biological research on shame and weight stigma, using an interdisciplinary approach. For example, its position that shame is an adaptive and evolutionary response; whereby how we understand ourselves to exist in the mind of the other can be a threat, triggering threat systems, which may connect to research finding a heightened cortisol response to weight stigma (Tomiyama, 2014). Moreover, a focus on shame as the key emotion of IWS, and a framing of IWS as a form of inner shaming, may provide a richer understanding of IWS and its felt sense (emotionally, physiologically).

A compassion-focused approach may support individuals with self-stigma and shame (Stynes, Leão & McHugh, 2022), with self-compassion proposed to be an antidote or buffer to shame and self-criticism (Gilbert & Proctor, 2006) which may share features with IWS. Self-compassion may be described as a way of relating to oneself with kindness and understanding when perceiving failures, flaws or inadequacies (Neff, 2003a) and is comprised of three components: self-kindness, common humanity and mindfulness (Neff, 2003b). Yet, individuals who experience more weight stigma report lower self-compassion (Forbes & Donovan, 2019). Developing and piloting interventions which draw on self-compassion to challenge IWS is a key area for future research. This is important as outcomes

in weight-related health and psychological wellbeing via reduced IWS appear to be better for those who are able to engage in self-compassion and self-reassurance (Duarte et al., 2017; Fekete, Herndier & Sander, 2021; Lamont & Deines, 2023).

Clinical implications

All participants experienced distress as a result of weight stigma and IWS. Given that the phenomenological nature of shame and stigma means that people often want to "conceal" these experiences, and that people often engaged in self-blame following these experiences, individuals may find it difficult to reach out for psychological support. A further barrier to seeking support may be they are resistant to access a healthcare system which itself may have caused them distress through its treatment of their weight. Therefore, measures to encourage access to psychological services for this cohort may be needed.

For people experiencing distress who receive weight management services, psychological provision within specialist obesity services varies nationally (BPS, 2019). Typically, people affected by obesity may have access to psychology at a tier three service, but not usually before this point. Tier two services (e.g. weight management groups in the community) are typically offered by local council services. Some may offer psychologically informed content, but few have access to a psychologist (BPS, 2019). As such, services may not be informed by psychological theory and research, or be able to seek consultation for particularly complex clients, or refer to individual therapy if thought to be indicated. Therefore, given that psychological factors and experiencing weight stigma is known to impact on weight-loss and other physical health outcomes, there appears to be a gap in service provision for achieving improved outcomes for people.

Moreover, while psychological provision exists within tier three services, this may serve the most complex service-user group, who have struggled the longest with weight, stigma and shame. Applying a preventative model which could provide different levels of psychological support (or psychologically informed content about weight) earlier at tier two services (and indeed other community settings) may support people to avoid needing tier three services, which may not only benefit the individual but also lead to decreased service use and cost within the NHS.

The question may then be what kind of psychological support will be helpful for people facing these difficulties. Psychotherapy may be able to support people's resilience in the face of external stigma and help people to challenge their own IWS. There may be a rationale for using compassion-focused therapy for people affected by excess weight who may experience high shame proneness, have traumatic shame memories related to their weight, and experience weight stigma, IWS and self-criticism, which may be captured clinically by self-report measures. Shame is an intensifying emotion; people can feel shame about their shame (Dolezal & Gibson, 2022). Framing shame as an

adaptive response may help to destigmatise, unpack the levels of shame and open up discussion on a personal and public level of people's experiences of weight-based stigma and shame. Moreover, clinically, across all psychological services which may be accessed by people affected by excess weight, assessing for historical and day-to-day weight stigma and IWS may be indicated in order to consider these experiences in their individual psychological formulation.

The impact of early weight shaming experiences suggest that working psychologically is also indicated in child weight management services. Complications from Excess Weight clinics for children and young people have been recently established nationally (Iacobucci, 2023) and emphasise a holistic and systemic approach to treating excess weight. This study underlines the impact of messages from parents and healthcare professionals to children about their weight, how these may be internalised to shape identity and may contribute to IWS. With its associations with poor physical and mental health, working psychologically with IWS in younger life may prove helpful clinically.

Participants in this and other studies discussed the impact of shaming, stigmatising experiences about their weight when at school; messages directly from teachers, peers and also implicitly in an environment which may not provide for larger bodies. Education and training in schools on this type of unconscious bias and implicit stigma may begin the process of preventative action, by making the invisible visible and providing a safe space for children to voice their experiences to other trusted adults in their microsystem.

Similarly, this study further highlighted that weight stigma can be experienced environmentally and interpersonally in healthcare settings. Raising awareness about weight bias and stigma among health care staff through training may help to prevent these experiences and provide feedback mechanisms for patients who experience weight-based stigma in this setting.

Lastly, there may be a role for clinical psychologists in pushing wider systemic change, chiefly through furthering the message that weight gain/loss is not solely within an individual's control as this appears to be the basis of weight stigma. On a wider societal level there needs to be a shift in the discourse around excess weight and the complexity of factors which maintain weight. Public health campaigns must no longer use "shame tactics" to prompt weight loss as it is understood not to be effective. Moreover, participants in this study felt that these campaigns contributed to the individual blame narrative around excess weight, and legitimised society's treatment and stereotypes of people with a higher weight.

Conclusions

The findings from this study suggest that people with excess weight experience various types of weight stigma from different sources, often starting in early childhood for those affected by excess

weight in their early years. These experiences of weight stigma both in the moment and over time may contribute to internalised weight stigma and shame. Experiencing stigma from a trusted figure and/or in childhood/adolescence may make internalised weight stigma more likely. The results indicate that weight stigma is also implicit and explicit in wider society, from environmental stigma to public health messaging; this can also link to people's IWS.

Participants in the current study highlighted that IWS may not just be connected to experiences of weight stigma, but also experiences of non-weight based stressful events in people's everyday lives, which may be related to the self-application of negative weight-based stereotypes about people with excess weight. However, the results indicated that some people can find ways of challenging their IWS; for example through challenging the credibility of the source of weight stigma, usually with age, or rejecting the application of these weight-based stereotypes. Through applying Gilbert's shame model, IWS processes may be seen as a defence for shame and weight stigma. Framing IWS in these terms may be helpful in deshaming these experiences and beginning to hold a compassionate stance towards one's internal world.

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List of Abbreviations

ACEs	Adverse childhood experiences
BMI	Body mass index
DPI	Data-prompted interviews
EMA	Ecological momentary assessment
GDPR	General Data Protection Regulation
IWS	Internalised weight stigma
NHS	National Health Service
PPI	Patient and public involvement
SSI	Stigmatising Situations Inventory
UK	United Kingdom
USA	United States of America
WSSQ	Weight Self-Stigma Questionnaire

Appendix A

Overview of EMA weight stigma studies

Authors; country	External stigma	Daily measures IWS	Psychological impact	Baseline measures	Sample	Collection period/EMA protocol
Carels, Hlavka, Selensky, Solar, Rossi & Miller (2019); USA	No	Yes – 11 items from Weight Bias Internalisation Scale	Mood (including shame) Coping (including negative self-talk) Body appreciation	Yes - but not stated	Mixed community sample (*n* = 66); BMI≥25	30-day collection period; participants completed one survey daily (daily diary method)
Carels, Rossi, Solar & Selensky (2017); USA	Yes – six categories of weight stigma, including "upsetting internal experiences or personal reminders about weight"	Yes – if "Personal reminders of your weight" is included Was not possible to report both weight stigma and IWS Did not measure using IWS measure	Urge to eat/exercise Coping Mood (including shame)	Stigmatising Situations Inventory; Weight Bias Internalisation Scale; Binge Eating Scale	Mixed weight-loss treatment seeking sample (*n* = 51); BMI≥27	Two-week data collection period; completed survey after weight stigma event and at two random time points
Mallett & Swim (2005); USA	Yes	No	Coping Stress	No	Community sample (*n* = 62); female only; BMI≥25	Seven-day collection period; participants completed up to four daily diaries
Panza (2018); USA	Yes	No	Stress Negative emotion Overeating Binge eating	Demographic variables Patient Health Questionnaire-9; Perceived Stress Scale; Social Support Behaviours Scale;	Sexual minority women (*n* = 55); BMI≥25	Five days; five random prompts

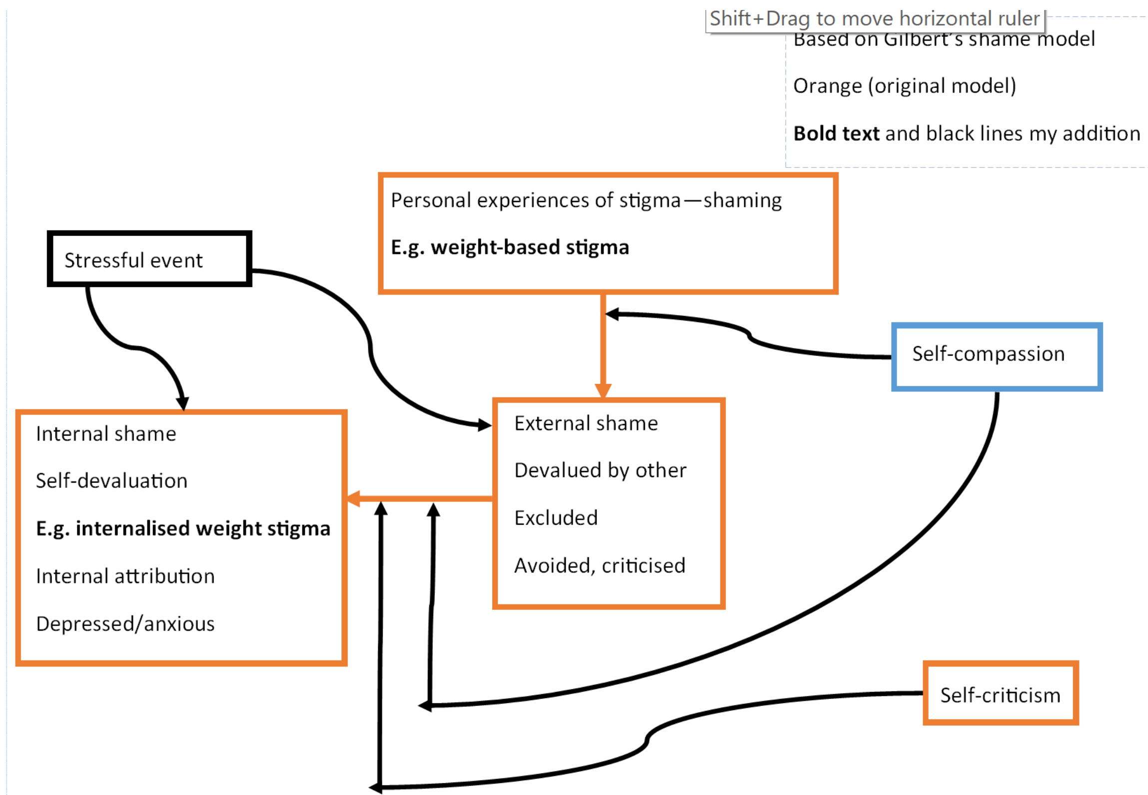
Authors; country	External stigma	Daily measures IWS	Psychological impact	Baseline measures	Sample	Collection period/EMA protocol
				Heterosexist Harassment, Rejection and Discrimination Scale; Stigmatising Situations Inventory; Schedule of Sexist Events; Lesbian Internalized Homophobia Scale; Sexual Orientation Concealment assessment; Anti-fat Attitudes Questionnaire; Weight Bias Internalization Scale; Internalized Misogyny Scale; Eating Disorder Examination-Questionnaire; Binge Eating Scale		
Panza, Olson, Goldstein, Selby & Lillis (2020); USA	Yes – including nature, frequency and contextual details	No	Affect	Demographic variables Stigmatising Situations Inventory	Sexual minority women (*n* = 55); BMI≥25	Five days; five random prompts
Potter (2018); USA	Yes	No	Mood Stress Behaviour	Demographic variables Stigmatising Situations Inventory; Vigilance to Stigma; Stigma Consciousness; Stereotype Threat;	Mixed community sample (*n* = 45); BMI≥25	Seven-day; six surveys per day randomly prompted and two self-initiated upon waking/before bed

Authors; country	External stigma	Daily measures IWS	Psychological impact	Baseline measures	Sample	Collection period/EMA protocol
				Three-Factor Eating Questionnaire-R-18; Perceived Stress Scale; Center for Epidemiologic Studies Depression Scale; Mood Adjective checklist; The Big Five Inventory-10; Rosenberg Self-esteem Scale; Weight Bias Internalization Scale; Anti-fat Attitudes Questionnaire; Body Appreciation Scale		
Potter, Meadows & Smyth (2020); USA	Yes – including nature, frequency and contextual details	No	Response to stigma	Stigmatising Situations Inventory Demographic variables	Mixed community sample (*n* = 48); BMI≥25	Seven-day; six random prompts
Seacat, Dougal & Roy (2014); USA	Yes – using items from Stigmatising Situations Inventory	Yes – some items reflected internalised stigma –	Not measured	Demographic variables Typical exercise frequency/type	Female only sample (*n* = 50); BMI≥25	Six-day period; Daily diary
Vartanian, Pinkus & Smyth (2014); Australia	Yes - including source and context	No	Affect	Stigmatising Situations Inventory	Mixed community sample (*n* = 46); self-reported as “overweight” or “obese”	Two-week period; completed a survey after weight stigma event
Vartanian, Pinkus & Smyth	Yes	No	Mood Motivation to diet, exercise and lose	Stigmatising Situations Inventory Weight Bias	Mixed community sample (*n* =	Two-week period; completed a survey after weight stigma event, and

Authors; country		Daily measures		Baseline measures	Sample	Collection period/EMA protocol
	External stigma	IWS	Psychological impact			
(2018); Australia			weight	Internalisation Scale Resting heart rate, BMI	46); self-reported as “overweight” or “obese”	end of the day

Appendix B

Conceptual model of IWS applying Gilbert's shame model



Appendix C

Original EMA study design and analysis

It was originally intended to investigate the concepts of weight stigma, shame and IWS using an ecological momentary assessment (EMA) design which offers particular methodological advantages (e.g. reducing recall bias, improving ecological validity, providing information about the temporal order of variables and within-person processes; Shiffman et al., 2008). However, a sufficient sample size was not obtained to statistically analyse this data with appropriate power. Therefore, these concepts were investigated using data collected using an EMA approach, but analysed using case series methods with additional qualitative methods to explore in greater depth the experiences participants' reported using EMA.

It had been hoped to explore whether particular demographic characteristics at baseline affected any fluctuations of IWS. This study measured demographic information (e.g. age, gender, ethnicity, age of excess weight onset, educational/marital status, BMI) assessed in other studies which point to a relationship with IWS (Pearl et al., 2019; Seacat et al., 2015). In addition and relatedly to the shame literature, it had been planned to explore whether self-compassion and self-criticism measured at baseline affected fluctuations in IWS. The extent to which a person appraises their life as stressful and the full shame measure was also administered at baseline as these were theorised to be related to IWS.

Overall, there have only been a few studies which have measured IWS as a momentary variable using an EMA design. Those which have (Carels et al., 2017; Carels et al., 2019; Seacat et al., 2014) did not measure or analyse IWS in relation to external events (e.g. external weight-based stigma) but rather used mainly daily diary designs to track fluctuations in IWS in relation to affect, coping responses and health behaviours. While historical experiences of weight-based stigma at baseline is associated with higher reported experiences of IWS, this has not been measured temporally. However, IWS may in part be a response to experiencing external stigma and therefore daily experiences in these may fluctuate correspondingly. Furthermore, no EMA weight-based stigma studies have used a UK sample to assess frequency of weight-based stigma experiences or explore whether similar baseline demographics may be risk factors associated with IWS.

EMA data on individuals is collected frequently and intensively so that there is a large data set on each individual, which is usually "nested" and analysed using multilevel modelling. Multilevel modelling assesses if there are any variations within individuals but also between individuals. Within persons, variations in IWS would have been explored and if this was associated with external events (weight-based stigma or stressful events) and shame. At a between persons level, analyses would have looked at whether people with a history of weight stigma had higher IWS and more frequently reported external stigma. To answer whether the traits self-criticism and self-compassion are associated with reporting external stigma, shame and IWS?, between persons analysis would have

explored whether people with more trait self-criticism and less trait self-compassion generally report higher IWS and more external stigma. The analysis would have allowed for the control of factors that may moderate these relationships, such as current BMI.

Power calculations, based on guidance from Maas and Hox (2005) indicated that 50 participants with a minimum of 80 per cent of EMA completed surveys were required for the planned analysis. The sample size achieved did not allow for these analyses to be performed on the EMA data.

Appendix D

Baseline measures and results

Self-criticism, reassured self, self-compassion and perceived stress measures were collected at baseline as part of the original EMA study as these constructs were believed to be stable and hypothesised to relate to the relationship between external weight stigma, shame and weight self-stigma.

Weight self-stigma and shame were collected at baseline to compare participants' weight self-stigma self-devaluation sub-scale and external shame sub-scale scores during the survey period.

Weight self-stigma was measured at baseline and following the survey to determine if increased self-monitoring of weight stigma, IWS and shame during the survey period affected people's internalised weight stigma. To calculate this, a reliable change criterion was calculated and compared to participant's pre-post WSSQ scores.

The Forms of Self-Criticising/Attacking and Self-Reassuring Scale (FSCRS; Gilbert, Clarke, Hempel, Miles & Irons, 2004) measures self-criticism and the ability to self-reassure. The 22-item scale asks how people think and feel about themselves when faced with setbacks or failures. Participants rate a series of statements on a five-point Likert scale, ranging from 0 (*not at all like me*) to 4 (*extremely like me*). This measure assesses three dimensions: inadequate-self (self-criticising), which assesses feelings of inadequacy and a sense of irritation and frustration toward the self (e.g., "When things go wrong for me I am easily disappointed with myself"); hated-self (self-attacking), which assesses a more extreme form of self-criticism, characterised by feeling of self-repugnance and desire to hurt the self in response to failures and setbacks (e.g., "I have a sense of disgust with myself"); and reassured-self (self-reassuring), which indicates the ability to be self-soothing/reassuring and treat the self with kindness and compassion when facing faults and failures (e.g., "I am gentle and supportive with myself"). A total self-criticism score was calculated (maximum: 56) by summing the inadequate-self and hated-self subscales as well as a score for reassured-self by summing the reassured-self subscales (maximum: 32). Internal reliability for each sub-scale was acceptable ($\alpha = .90$ for inadequate self; $\alpha = .86$ for hated self and reassured self). Higher values indicated higher levels of self-criticism or self-reassurance. As there are no clinical cut-offs, participants who scored 0-28.5 were categorised as having "low" self-criticism, and participants who scored 28.6-56 were categorised as having "high" self-criticism; participants who scored 0-16.5 were categorised as having "low" reassured self, and participants who scored 16.5-32 were categorised as having "high" reassured self.

The Perceived Stress Scale (PSS; Cohen, Kamarck & Mermelstein, 1983) measures the extent to which a person appraises events in their life as stressful. These 10-items aim to assess how unpredictable, uncontrollable, and overloaded respondents have found their lives in the past month.

Respondents score on a five-point Likert scale (0 = *never* to 4 = *very often*) to items such as “In the last month, how often have you felt that you were unable to control the important things in your life?”. Internal reliability for total scale was acceptable (α = .85). A score was calculated by summing all these items, accounting for reversed scores where appropriate (maximum: 40). Higher values indicated higher levels of perceived stress. As there are no clinical cut-offs, participants who scored 0-20.5 were categorised as having “low” perceived stress, and participants who scored 20.6-40 were categorised as having “high” perceived stress.

The Self-Compassion Scale-Short Form (SCS-SF; Raes, Pommier, Neff & Van Gucht, 2011) measures trait self-compassion. The SCS-SF captures the three facets of self-compassion: self-kindness, mindfulness and common humanity. It contains 12 items (e.g., “When I fail at something important to me, I become consumed by feelings of inadequacy”). Responses are on a five-point Likert scale (1 = *almost never* to 5 = *almost always*) reversing items where relevant, with higher scores indicating higher levels of trait self-compassion. Internal reliability was acceptable (α = .87). A mean total score is calculated (maximum: 5). As there are no clinical cut-offs, participants who scored 1-2.5 were categorised as having “low” self-compassion, and participants who scored 2.6-5 were categorised as having “high” self-compassion.

For copies of all baseline questionnaires see Appendix H.

Table D1

Participant Demographic and Psychometric Data per Sample for All Baseline Measures and Exit Questionnaire

	Total sample (*n* = 40)	Daily survey sample (*n* = 16)[a]	Interview sample (*n* = 8)
Gender, No (%)			
Male	NA	2 (12)	0 (0)
Female	NA	14 (88)	8 (100)
Age, mean (SD), y	NA	45.67 (12.5)	43.14 (13.9)
Ethnicity, No (%)			
White British	NA	14 (93)	6 (86)
White Other	NA	1 (7)	1 (14)

Civil status, No (%)			
Living with partner	NA	4 (26)	2 (29)
Married	NA	8 (53)	3 (42)
Single	NA	2 (14)	2 (29)
Divorced	NA	1 (7)	0
Highest education level attained, No (%)			
No qualifications	NA	1 (7)	0
GCSEs or equivalent	NA	1 (7)	0
A-levels or equivalent	NA	1 (7)	0
Vocational, professional	NA	3 (20)	2 (29)
Other higher education	NA	3 (20)	1 (14)
Degree level or higher	NA	6 (39)	4 (57)
BMI, mean (SD)	NA	40.61 (8.69)	37.07 (6.56)
Years affected by excess weight, mean (SD)	NA	26.73 (14.67)	29.14 (18.30)
Actively engaged in weight loss, No (%)			
Yes	NA	8 (54)	4 (57)
No	NA	7 (46)	3 (43)
EISS, mean (SD)	20.5 (6.1)	20.4 (5.6)	19.9 (5.4)
High shame, No (%)	30 (75)	12 (75)	7 (88)
Low shame, No (%)	10 (25)	4 (25)	1 (12)
FSCSR			
Self-criticism, mean (SD)	33.6 (13.9)	34.9 (14.3)	33 (14.1)
High self-criticism, No (%)	27 (68)	12 (75)	5 (63)
Low self-criticism, No (%)	13 (32)	4 (25)	3 (37)

Reassured self, mean (SD)	10.0 (7.1)	9.9 (6.5)	11.8 (7.4)
High reassured self, No (%)	6 (12)	2 (6)	2 (25)
Low reassured self, No (%)	34 (88)	14 (94)	6 (75)
PSS, mean (SD)	23.9 (7.5)	23.6 (7.3)	22.5 (5.9)
High stress, No (%)	28 (70)	10 (63)	4 (50)
Low stress, No (%)	12 (30)	6 (37)	4 (50)
SC-SF	2.7 (0.8)	2.8 (0.6)	2.9 (0.7)
High self-compassion, No (%)	12 (30)	6 (38)	3 (38)
Low self-compassion, No (%)	28 (70)	10 (62)	5 (62)
WSSQ, mean (SD)	47.2 (9.4)		
Pre-survey		47.8 (7.3)	48.1 (7.6)
Post-survey		46.3 (6.8)	46.8 (5.0)
High self-stigma, No (%)	37 (93)		
Pre-survey		16 (100)	8 (100)
Post-survey		15[b] (100)	8 (100)
Low self-stigma, No (%)	3 (7)		
Pre-survey		0 (0)	0 (0)
Post-survey		0 (0)	0 (0)

[a] One demographics questionnaire missing.

[b] One post-survey WSSQ not completed.

Appendix E

Advert for participant recruitment

Do other people or things in your life often make you feel bad about your weight?

If you are 18 years old or older and are affected by a higher body weight (a body mass index of 30 or over) then we would love to hear from you.

A new study exploring experiences of weight stigma in people with a higher weight

If you are interested in taking part, would like to know more about the study or to check eligibility, please click the link below:

https://tinyurl.com/3krcdx38

Or email Clare— umcpi@leeds.ac.uk

We're looking for adults to take part in our study on experiences of weight stigma.

Are you eligible?

- Aged 18 year plus
- BMI > 30
- Live anywhere in the UK
- Own a smartphone and be able to download an app
- Be fluent in written English
- Able to access study resources via smartphone and/or laptop

You cannot take part if you:

- Have a previous/current diagnosis of an eating disorder
- Have a diagnosis of a mental health problem for which you have been hospitalised in the past 3 months
- Are pregnant or nursing

What will the study involve?

- Completing some initial questionnaires and then completing a brief survey a few times a day in a 2-week period
- Reporting on weight stigma and stressful events in the course of your everyday life
- The brief survey will take approximately 5 mins each time you complete it
- Downloading a free app onto your personal smartphone to complete the study

Participants who complete initial questionnaires & 80% or more of the daily surveys will receive a £10 online shopping voucher as a small incentive.

Please note, this is an observational study and not an intervention study.

No travel is required for this study.

All study contact is remote.

Conducted under the supervision of Dr Rebecca Beeken & Dr Ciara Masterson at the University of Leeds. This study has received ethical approval from the School of Medicine Research Ethics Committee.

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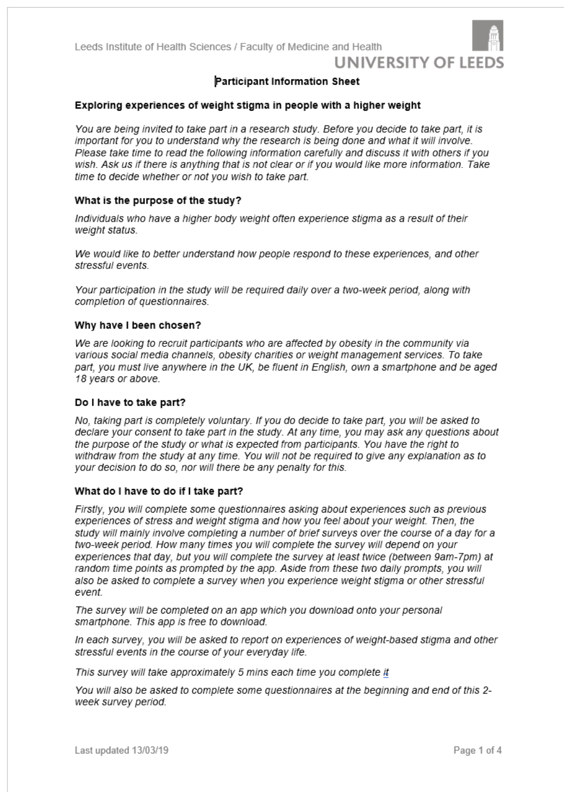
Picture courtesy of Obesity Canada

Appendix F

Participant Information Sheet for daily surveys



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Participant Information Sheet

Exploring experiences of weight stigma in people with a higher weight

You are being invited to take part in a research study. Before you decide to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of the study?

Individuals who have a higher body weight often experience stigma as a result of their weight status.

We would like to better understand how people respond to these experiences, and other stressful events.

Your participation in the study will be required daily over a two-week period, along with completion of questionnaires.

Why have I been chosen?

We are looking to recruit participants who are affected by obesity in the community via various social media channels, obesity charities or weight management services. To take part, you must live anywhere in the UK, be fluent in English, own a smartphone and be aged 18 years or above.

Do I have to take part?

No, taking part is completely voluntary. If you do decide to take part, you will be asked to declare your consent to take part in the study. At any time, you may ask any questions about the purpose of the study or what is expected from participants. You have the right to withdraw from the study at any time. You will not be required to give any explanation as to your decision to do so, nor will there be any penalty for this.

What do I have to do if I take part?

Firstly, you will complete some questionnaires asking about experiences such as previous experiences of stress and weight stigma and how you feel about your weight. Then, the study will mainly involve completing a number of brief surveys over the course of a day for a two-week period. How many times you will complete the survey will depend on your experiences that day, but you will complete the survey at least twice (between 9am-7pm) at random time points as prompted by the app. Aside from these two daily prompts, you will also be asked to complete a survey when you experience weight stigma or other stressful event.

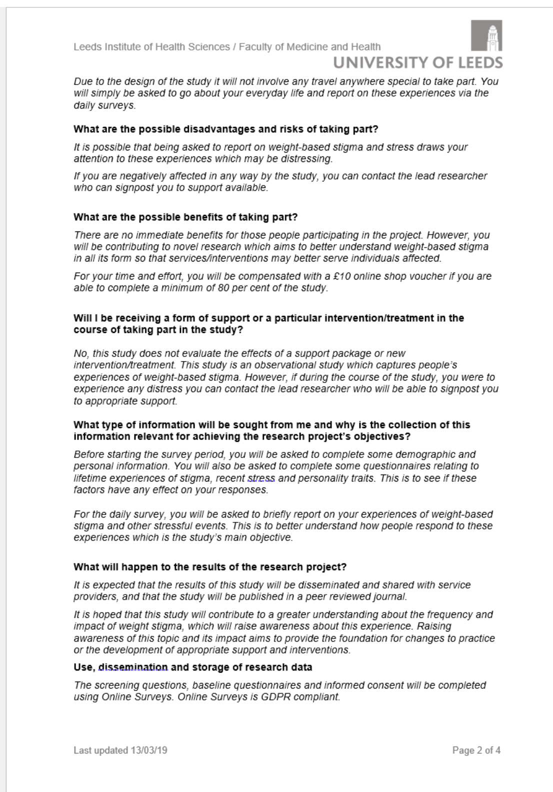
The survey will be completed on an app which you download onto your personal smartphone. This app is free to download.

In each survey, you will be asked to report on experiences of weight-based stigma and other stressful events in the course of your everyday life.

This survey will take approximately 5 mins each time you complete it

You will also be asked to complete some questionnaires at the beginning and end of this 2-week survey period.

Last updated 13/03/19 Page 1 of 4



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Due to the design of the study it will not involve any travel anywhere special to take part. You will simply be asked to go about your everyday life and report on these experiences via the daily surveys.

What are the possible disadvantages and risks of taking part?

It is possible that being asked to report on weight-based stigma and stress draws your attention to these experiences which may be distressing.

If you are negatively affected in any way by the study, you can contact the lead researcher who can signpost you to support available.

What are the possible benefits of taking part?

There are no immediate benefits for those people participating in the project. However, you will be contributing to novel research which aims to better understand weight-based stigma in all its form so that services/interventions may better serve individuals affected.

For your time and effort, you will be compensated with a £10 online shop voucher if you are able to complete a minimum of 80 per cent of the study.

Will I be receiving a form of support or a particular intervention/treatment in the course of taking part in the study?

No, this study does not evaluate the effects of a support package or new intervention/treatment. This study is an observational study which captures people's experiences of weight-based stigma. However, if during the course of the study, you were to experience any distress you can contact the lead researcher who will be able to signpost you to appropriate support.

What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

Before starting the survey period, you will be asked to complete some demographic and personal information. You will also be asked to complete some questionnaires relating to lifetime experiences of stigma, recent stress and personality traits. This is to see if these factors have any effect on your responses.

For the daily survey, you will be asked to briefly report on your experiences of weight-based stigma and other stressful events. This is to better understand how people respond to these experiences which is the study's main objective.

What will happen to the results of the research project?

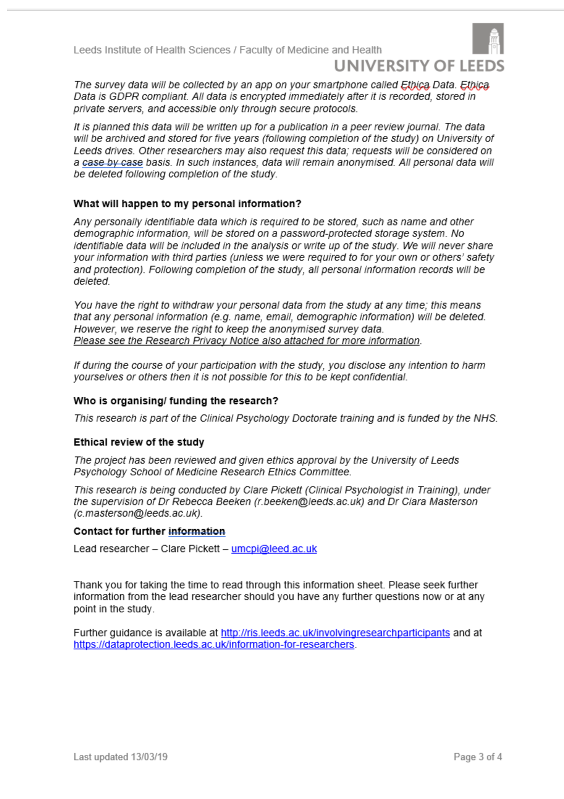
It is expected that the results of this study will be disseminated and shared with service providers, and that the study will be published in a peer reviewed journal.

It is hoped that this study will contribute to a greater understanding about the frequency and impact of weight stigma, which will raise awareness about this experience. Raising awareness of this topic and its impact aims to provide the foundation for changes to practice or the development of appropriate support and interventions.

Use, dissemination and storage of research data

The screening questions, baseline questionnaires and informed consent will be completed using Online Surveys. Online Surveys is GDPR compliant.

Last updated 13/03/19 Page 2 of 4



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The survey data will be collected by an app on your smartphone called Ethica Data. Ethica Data is GDPR compliant. All data is encrypted immediately after it is recorded, stored in private servers, and accessible only through secure protocols.

It is planned this data will be written up for a publication in a peer review journal. The data will be archived and stored for five years (following completion of the study) on University of Leeds drives. Other researchers may also request this data; requests will be considered on a case by case basis. In such instances, data will remain anonymised. All personal data will be deleted following completion of the study.

What will happen to my personal information?

Any personally identifiable data which is required to be stored, such as name and other demographic information, will be stored on a password-protected storage system. No identifiable data will be included in the analysis or write up of the study. We will never share your information with third parties (unless we were required to for your own or others' safety and protection). Following completion of the study, all personal information records will be deleted.

You have the right to withdraw your personal data from the study at any time; this means that any personal information (e.g. name, email, demographic information) will be deleted. However, we reserve the right to keep the anonymised survey data.
Please see the Research Privacy Notice also attached for more information.

If during the course of your participation with the study, you disclose any intention to harm yourselves or others then it is not possible for this to be kept confidential.

Who is organising/ funding the research?

This research is part of the Clinical Psychology Doctorate training and is funded by the NHS.

Ethical review of the study

The project has been reviewed and given ethics approval by the University of Leeds Psychology School of Medicine Research Ethics Committee.

This research is being conducted by Clare Pickett (Clinical Psychologist in Training), under the supervision of Dr Rebecca Beeken (r.beeken@leeds.ac.uk) and Dr Ciara Masterson (c.masterson@leeds.ac.uk).

Contact for further information

Lead researcher – Clare Pickett – umcpi@leed.ac.uk

Thank you for taking the time to read through this information sheet. Please seek further information from the lead researcher should you have any further questions now or at any point in the study.

Further guidance is available at http://ris.leeds.ac.uk/involvingresearchparticipants and at https://dataprotection.leeds.ac.uk/information-for-researchers.

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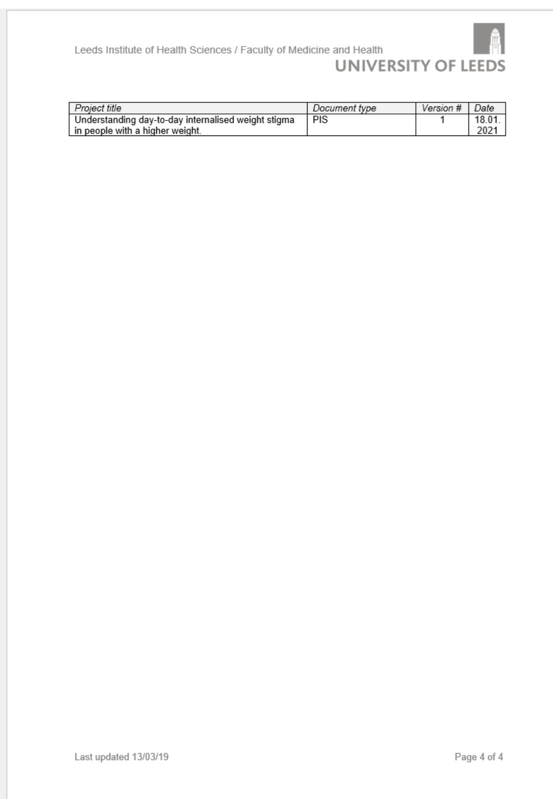

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Project title	Document type	Version #	Date
Understanding day-to-day internalised weight stigma in people with a higher weight.	PIS	1	18.01.2021

Last updated 13/03/19 Page 4 of 4

Appendix G

Consent Form for daily surveys

Leeds Institute of Health Sciences / Faculty of Medicine and Health

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Participant Consent Form

Consent to take part in: Exploring experiences of weight stigma in people with a higher weight

I confirm that I have read and understand the Participant Information Sheet explaining the research project and I have had the opportunity to ask questions about the project.
I understand that my participation is voluntary and that I am free to withdraw my participation at any time without giving any reason. I understand there will be no negative consequences for doing so. In addition, should I not wish to answer any particular question or questions, I am free to decline. If I do decide to withdraw, I understand my personal data given will be deleted. However, under the principle of 'public task' in the Data Protection Act I understand that my anonymised survey data will not be deleted.
I understand that members of the research team may have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. I understand that my responses will be kept strictly confidential.
I understand that the data collected from me may be stored and used in relevant future research in an anonymised form
I understand that relevant sections of the data collected during the study, may be looked at by individuals from the University of Leeds or from regulatory authorities where it is relevant to my taking part in this research.
I agree to take part in the above research project and will inform the lead researcher should my contact details change.

If you wish to give you consent to take part in the study, please type your name here _________
By typing your name you are confirming you have read the above information and consent to take part in the study.

Project title	*Document type*	*Version #*	*Date*
Understanding day-to-day internalised weight stigma in people with a higher weight.	Consent form	1	18.01. 2021

Template last updated 15/05/19

Page 1 of 1

Appendix H

Psychometric measures used in study

EISS

(C. Ferreira, M. Moura-Ramos, M. Matos & A. Galhardo, 2020)

Below are a series of statements about feelings people may usually have, but that might be experienced by each person in a different way. Please read each statement carefully and circle the number that best indicates how often you feel what is described in each item.

Please use the following rating scale

0 = Never	1 = Rarely	2 = Sometimes	3 = Often	4 = Always

	In relation to several aspects of my life, I FEEL THAT:	0	1	2	3	4
1	other people see me as not being up to their standards	0	1	2	3	4
2	I am isolated	0	1	2	3	4
3	other people don't understand me	0	1	2	3	4
4	I am different and inferior to others	0	1	2	3	4
5	other people are judgmental and critical of me	0	1	2	3	4
6	other people see me as uninteresting	0	1	2	3	4
7	I am unworthy as a person	0	1	2	3	4
8	I am judgmental and critical of myself	0	1	2	3	4

PERCEIVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.**

Name ________________________________ Date ____________

Age _______ Gender (*Circle*): **M F** Other ______________________

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9. In the last month, how often have you been angered because of things that were outside of your control?	0	1	2	3	4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never				Almost always
1	2	3	4	5

_____1. When I fail at something important to me I become consumed by feelings of inadequacy.

_____2. I try to be understanding and patient towards those aspects of my personality I don't like.

_____3. When something painful happens I try to take a balanced view of the situation.

_____4. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____5. I try to see my failings as part of the human condition.

_____6. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____7. When something upsets me I try to keep my emotions in balance.

_____8. When I fail at something that's important to me, I tend to feel alone in my failure

_____9. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____11. I'm disapproving and judgmental about my own flaws and inadequacies.

_____12. I'm intolerant and impatient towards those aspects of my personality I don't like.

WSSQ

Below you will find a list of statements. ***Please rate how much you agree with each statement as it applies to you.*** Use the following scale to make your choice

1	2	3	4	5
Completely disagree	Mostly disagree	Neither agree nor disagree	Mostly agree	Completely agree

_____1. I'll always go back to being overweight.

_____2. I caused my weight problems.

_____3. I feel guilty because of my weight problems.

_____4. I became overweight because I'm a weak person.

_____5. I would never have any problems with weight if I were stronger.

_____6. I don't have enough self-control to maintain a healthy weight.

_____7. I feel insecure about others' opinions of me.

_____8. People discriminate against me because I've had weight problems.

_____9. It's difficult for people who haven't had weight problems to relate to me.

_____10. Others will think I lack self-control because of my weight problems.

_____11. People think that I am to blame for my weight problems.

_____12. Others are ashamed to be around me because of my weight.

THE FORMS OF SELF-CRITICISING/ATTACKING & SELF-REASSURING SCALE (FSCRS)

When things go wrong in our lives or don't work out as we hoped, and we feel we could have done better, we sometimes have *negative and self-critical thoughts and feelings*. These may take the form of feeling worthless, useless or inferior etc. However, people can also try to be supportive of them selves. Below are a series of thoughts and feelings that people sometimes have. Read each statement carefully and circle the number that best describes how much each statement is true for you.

Please use the scale below.

Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
0	1	2	3	4

When things go wrong for me:

1.	I am easily disappointed with myself.	0	1	2	3	4
2.	There is a part of me that puts me down.	0	1	2	3	4
3.	I am able to remind myself of positive things about myself.	0	1	2	3	4
4.	I find it difficult to control my anger and frustration at myself.	0	1	2	3	4
5.	I find it easy to forgive myself.	0	1	2	3	4
6.	There is a part of me that feels I am not good enough.	0	1	2	3	4
7.	I feel beaten down by my own self-critical thoughts.	0	1	2	3	4
8.	I still like being me.	0	1	2	3	4
9.	I have become so angry with myself that I want to hurt or injure myself.	0	1	2	3	4
10.	I have a sense of disgust with myself.	0	1	2	3	4
11.	I can still feel lovable and acceptable.	0	1	2	3	4
12.	I stop caring about myself.	0	1	2	3	4
13.	I find it easy to like myself.	0	1	2	3	4
14.	I remember and dwell on my failings.	0	1	2	3	4
15.	I call myself names.	0	1	2	3	4

16.	I am gentle and supportive with myself.	0	1	2	3	4
17.	I can't accept failures and setbacks without feeling inadequate.	0	1	2	3	4
18.	I think I deserve my self-criticism.	0	1	2	3	4
19.	I am able to care and look after myself.	0	1	2	3	4
20.	There is a part of me that wants to get rid of the bits I don't like.	0	1	2	3	4
21.	I encourage myself for the future.	0	1	2	3	4
22.	I do not like being me.	0	1	2	3	4

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THE FORMS OF SELF-CRITICISING/ATTACKING & SELF-REASSURING SCALE (FSCRS)

SCORING

1. **is**	I am easily disappointed with myself.	0	1	2	3	4
2. **is**	There is a part of me that puts me down.	0	1	2	3	4
3. **rs**	I am able to remind myself of positive things about myself.	0	1	2	3	4
4. **is**	I find it difficult to control my anger and frustration at myself.	0	1	2	3	4
5. **rs**	I find it easy to forgive myself.	0	1	2	3	4
6. **is**	There is a part of me that feels I am not good enough.	0	1	2	3	4
7. **is**	I feel beaten down by my own self-critical thoughts.	0	1	2	3	4
8. **rs**	I still like being me.	0	1	2	3	4
9. **hs**	I have become so angry with myself that I want to hurt or injure myself.	0	1	2	3	4
10.**hs**	I have a sense of disgust with myself.	0	1	2	3	4
11.**rs**	I can still feel lovable and acceptable.	0	1	2	3	4
12.**hs**	I stop caring about myself.	0	1	2	3	4
13.**rs**	I find it easy to like myself.	0	1	2	3	4
14.**is**	I remember and dwell on my failings.	0	1	2	3	4
15.**hs**	I call myself names.	0	1	2	3	4
16.**rs**	I am gentle and supportive with myself.	0	1	2	3	4
17.**is**	I can't accept failures and setbacks without feeling inadequate.	0	1	2	3	4
18.**is**	I think I deserve my self-criticism.	0	1	2	3	4
19.**rs**	I am able to care and look after myself.	0	1	2	3	4
20.**is**	There is a part of me that wants to get rid of the bits I don't like.	0	1	2	3	4
21.**rs**	I encourage myself for the future.	0	1	2	3	4
22.**hs**	I do not like being me.	0	1	2	3	4

KEY FOR SUBSCALES:

is = inadequate self,
rs = reassured self,
hs = hated self

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Appendix I

Demographic form

Leeds Institute of Health Sciences / Faculty of Medicine and Health

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Exploring experiences of weight stigma in people with a higher weight

Participant Demographic Form

Please could you provide us with the following information. Please note this information will be stored securely in password-protected folder and will only be accessible by the lead researcher. This information will not be shared with anyone else.

Name ____

Age ____________ years

Gender _______________

What is your civil status? (please cross/tick)
Single __________
Married __________
Living with partner __________
Have a romantic partner but live separately __________
Divorced/separated __________
Widowed __________

What is your ethnicity?
White/White British __________
Gypsy/Traveller/Irish Traveller __________
Black or Black British __________
Asian or Asian British (Indian) __________
Asian or Asian British (Pakistani) __________
Asian or Asian British (Bangladeshi) __________
Asian or Asian British (Chinese) __________
Asian or Asian British (Other Asian) __________
Mixed ethnicity __________
Other ethnic group __________

What is the highest level of educational qualification that you have obtained? (please cross/tick)
No qualifications _____
Vocational, professional or foreign qualification or other type of qualification _____
GCSE, O levels or equivalent _____
A-levels, AS level, or equivalent _____
Other Higher Education qualification below degree level _____
Degree level or higher _____

What is your: weight ________ kilos/stone/pounds (delete as applicable)
height ________ feet/inches/metres/cm (delete as applicable)

How long have you been affected by excess weight? ______ years

Are you currently shielding or restricting face-to-face contact due to the Covid-19 pandemic? YES/NO (please indicate as appropriate)

Are you currently actively engaged in an attempt to lose weight? YES/NO (please indicate as appropriate)

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If yes, what type:
Commercial weight-loss programme (e.g. Weight Watchers) _______
Self-help book (e.g. diet plan and/or physical activity plan) _______
Medically advised programme _______
Weight-loss medication _______
Waiting for weight loss surgery _______
Taking supplements _______
Alternative/holistic therapy (e.g. acupuncture) _______
Independently researched weight-loss programme involving diet changes and/or exercise_______
Other _______

Page 2 of 2

Appendix J

Instructions sent to participants for how to use Ethica app and complete surveys

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Instructions to participants

You are taking part in a study about different types of weight stigma.

We are defining weight stigma as "any instance where you feel you are being treated differently or negatively evaluated because of your weight".

Examples may include friends, acquaintances, or co-workers making fun of your weight, being glared at in public, not being able to find clothes that fit or a doctor blaming unrelated physical problems on your weight.

Not much research has been done in the area of weight stigma and therefore we don't have expectations as to what sort of events you might experience or how many times you will report these to us. We are interested in any experiences you have that you feel fits with this weight stigma definition.

In this way, we are interested in the episodes of weight stigma that naturally occur in your everyday life. In this way you can act as "participant investigators" and help us find out more about the phenomenon of weight stigma.

We understand that some situations are unclear, or can be interpreted in different ways. Events may or may not be interpreted as weight stigma depending on the person involved or the context of the event. So whether you report an event is up to you and how you have experienced an event.

So firstly we will be asking you to complete a brief survey on the app each time you experience weight stigma. We want to understand your response to weight stigma, so the survey also asks about particular types of thoughts and feelings.

Secondly, we also want to understand your response if you experience other types of stressful events. By stressful event we mean *any* general life stressor. These may be personally stressful events (e.g. could be related to your own health, work or family) or may be related to wider societal stressors (e.g. climate change or news events). A stressful event also includes if you have experienced stigma or discrimination based on other characteristics *apart from* your weight (for example, if you experience unfavourable treatment or stereotypes based on your gender, age, ethnicity, sexual orientation or any other characteristic).

So we are asking you to complete a brief survey on the app when you have an experience of this kind.

Lastly, we will also be asking you twice a day how you are feeling about your weight. These brief surveys will be sent by the app at random times between 9am-7pm. **Please can you complete the survey on these occasions also.**

Each brief survey consists of a yes/no questions about weight stigma and non weight-related stressful events, followed by 10 multiple choice questions about how you are thinking/feeling in that moment. In total, this survey will take approximately 5 mins each time you complete it.

What should I do?

Next you will receive a welcome call from the lead researcher to help you with getting set up on Ethica Data, to give you a further opportunity to ask any questions about the study and to complete a demographics questionnaire.

Before this call, we kindly ask that you try to download the Ethica Data app. To do this, you can go to the Play Store or Apple Store. This is free to download.

After the app is downloaded, please go back to your email from the study team (Subject: 'How to join the study and what the study involves') via your smartphone. In this email there will be a link you can click which should then connect with the Ethica app. Ethica also send you an invitation email which will have a link to the study (you can use either of these). If required, the study code is 1593.

You will then need to create an account ('sign up') to use the app but these details will not be accessible by the researchers. You will then use these details to 'log in' to the app. Please note the email you use to create the account must be the same one you have provided to the study team.

If you would prefer, during the welcome call the lead researcher can help you to get set up on Ethica.

Given that the app prompts you to complete daily surveys and that you may want to complete a survey when out, we request that you complete the daily surveys via your smartphone and not your laptop.

Completing the surveys on Ethica

Please note, the app will enable surveys and send reminders to complete the surveys *from the day after* signing up to the app. So on the day of signing up

to the study on Ethica, signing up is all you have to do. Day 1 of the surveys starts the day after sign up.

On day 1 the app will prompt you two times a day to complete the brief survey. We ask you to complete this when prompted where possible. If it is not convenient to do the survey at the time of the prompt, please complete the survey later but as soon as possible following the prompt.

Additionally, please complete a survey following an event which makes you feel bad about your weight, or stressful event or other form of stigma.

Please continue in this way for a continuous 14-day period.

You are also asked to enter your participant code once; this allows us to connect all your data. We suggest doing this on day 1 of the surveys.

At the end of the 14-day period of completing these brief surveys, you will then just be asked to complete one final questionnaire. We will contact you closer to the time via email with a link directing you to this questionnaire.

You can contact the lead researcher, Clare Pickett, on umcpi@leeds.ac.uk if you have any questions.

Appendix K

Daily survey completed by participants when prompted

Version 3 – Completes when randomly prompted

1. Have you **recently** experienced an event which has made you feel bad about your weight?

Some events which make you feel bad about your weight may be really obvious but some may be more subtle, and different people may interpret the same event in different ways. We ask that if you personally interpret an event in this way what you select yes.

If yes, select all that apply to your recent experience. Please note 'others' could refer to anyone (i.e. friends, family, medical professionals, general public)

a. No
b. Yes - Nasty or inappropriate comments from others
c. Yes - Discrimination
d. Yes - Others making assumptions because of your weight
e. Yes – Loved ones embarrassed by your weight
f. Yes - Structural or physical barriers (e.g. seats too small, aisles too narrow, no lift)
g. Yes - Personal reminders of your weight (e.g. trying on clothes, mirrors)
h. Yes - Exposure to news, social media or advertising

2. Have you **recently** experienced a general stressful event (not related to your weight)?

   Whether a person feels that an event is stressful is, to some degree, individual and varies moment-to-moment. It depends on the particular demands of an event, how controllable, predictable, or overwhelming those events feel, and a person's ability to cope with or manage those demands.

   a. YES
   b. NO

3. How much do you agree with these statements in this moment?

   On a scale from 1-5 - please note you cannot score 0 and have to move the scale.
   1=completely disagree
   2=mostly disagree
   3=neither agree nor disagree
   4=mostly agree
   5=completely agree

   a. Other people see me as not being up to their standards
   b. Other people don't understand me
   c. Other people see me as uninteresting
   d. Other people are judgmental and critical of me

4. How much do you agree with these statements (in this moment?)

   On a scale from 1-5 - please note you cannot score 0 and have to move the scale.
   1=completely disagree
   2=mostly disagree
   3=neither agree nor disagree
   4=mostly agree
   5=completely agree

   At the moment, I am...

   a. I am thinking I'll always have excess weight
   b. I am thinking I caused my weight problems
   c. I am feeling guilty because of my weight problems
   d. I am thinking I would never have any problems with weight if I were stronger
   e. I am thinking I don't have enough self-control to maintain a healthy weight

THANK YOU FOR COMPLETING THIS SURVEY.

Your participation is greatly appreciated.

It is possible that completing this survey may cause temporary distress. If this occurs, we invite you to look after yourself in ways in which you would typically manage difficult feelings e.g. self-care, talking to a friend, doing a valued activity.
However, if you feel the distress is hard to tolerate and you require additional support, please contact the lead researcher at umcpi@leeds.ac.uk who can signpost you to the most appropriate support. Accessing support will not require you to stop with the study; however you can also withdraw your participation at any time if you would like.

Appendix L

Debrief materials

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Exploring experiences of weight stigma in people with a higher weight

Participant Debrief Page

Thank you for participating in this study. Your time and contributions are greatly appreciated. We think that this is an important area to research and we hope that you have found participating interesting.

If you have decided to seek additional support at this time, we hope you find the attached document useful – it lists charities, organisations and services who provide support or information.

If you have found participating in the research to be distressing and you wish to speak to one of the researchers, please contact: Clare Pickett on umcpi@leeds.ac.uk.

If you have completed 40% or more of the surveys, we will be in touch soon with your voucher.

Thank you again for your time!

Best wishes

Clare

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Leeds Institute of Health Sciences / Faculty of Medicine and Health

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Exploring experiences of weight stigma in people with a higher weight

Participant Debrief Sheet - Signposting

There are a number of mental health organisations listed below which you can contact if your emotional wellbeing has been affected by any of the topics raised in this study.

Organisations	
NHS Direct 111	Calm (Men Only) Tel: 0800 58 58 58
Anxiety UK Tel: 03444 775 774 (helpline) Text: 07537416905	Mind Tel: 0300 123 3393
No Panic Tel: 0330 606 1174	Samaritans (24-hour helpline) Tel: 116123
SANE Tel: 0300 304 7000	Rethink Mental Illness Tel: 0300 5000 927

Following this link below provides a wider range of specialist services which are available for you to contact. It also enables you to find your local NHS urgent mental health helpline.
https://www.nhs.uk/conditions/stress-anxiety-depression/mental-health-helplines/

Please see below for some national charities which provide support to those affected by obesity; most of these offer support by way of information giving/advice and some facilitate support groups:

- **Obesity UK** is the leading charity dedicated to supporting people affected by obesity. They offer support groups and information.
- **Obesity Empowerment Network UK** is a non-profit advocacy organisation of professionals and people living with obesity who are fighting stigma and fighting for weight loss services.
- **The British Obesity Society** (thebos.org) is a charity focused on advancing the needs of people affected by obesity.
- **Association for Study of Obesity** (ASO) is a charitable organisation dedicated to the understanding, prevention and treatment of obesity.
- **British Obesity and Metabolic Surgery Society** (BOMSS) is a professional society of surgeons involved in obesity management.
- **National Obesity Forum** (NOF) raises awareness about the causes, preventions and treatment of obesity.
- **Weight Concern** is a charity which works to address the physical and psychological needs of people affected by excess weight.
- **Weight Loss Surgery Information** (WLSinfo.org) offers information and support on weight loss surgery.

Please see below for some national charities which provide support to those affected by difficulties with binge eating, anxiety about food or who have a difficult relationship with food and eating. Support includes helplines, online courses/meetings and peer support. Individuals can self-refer and accessing the helpline/website is the first step.

- **BEAT (Eating Disorders)** - Tel: 0808 801 0677 (Helpline) or https://www.beateatingdisorders.org.uk/support-services/myself
- **MaleVoice** ED: https://www.malevoiced.com/help-and-support
- **Anorexia and Bulimia Care (ABC)** – Tel: 03000 111213 (Weds – Fri 9.00-13.00; 14.00-17.00) (helpline)
- **Overeaters Anonymous** – offer online meetings: http://www.oagb.org.uk/what-to-expect-at-a-oa-meeting/
- **First Steps** (Derbyshire ED charity): offer face-to-face appointments to anyone in East Midlands or video consultations to anyone in UK: https://firststepsed.co.uk/make-a-referral/

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Please see below for some local organisations which can help people with eating difficulties. However, please note that accessing local services typically depends on your location

- **Support Education ED (SEED):** https://www.seedlancashire.co.uk/
- **SYEDA** (South Yorkshire ED charity): https://www.syeda.org.uk/
- **First Steps** (Derbyshire ED charity): offer face-to-face appointments to anyone in East Midlands or video consultations to anyone in UK: https://firststepsed.co.uk/make-a-referral/
- **NIWE** (North east ED charity): https://www.niwe.org.uk/contact-us/
- **SWEDA** (Somerset and Wessex ED charity): https://www.swedauk.org/services

Depending on your personal circumstances, you may also be able to access free support from a Student Union Wellbeing Service or Workplace Wellbeing service (Occupational Health).

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Appendix M

Selection of sample emails sent to participants

Email: Subject: 'How to join the study and what the study involves'

Dear [Participant],

Thank you for your continued participation in my study.

I am writing with information on how to join the study and more detail on what taking part involves.

Please could you take a quick moment to read the attached document with some instructions on how you can get started with the survey and what's required. If you are able to download Ethica and set up an account, you can follow this link to join the study: https://ethicadata.com/study/1593/

I would also like to arrange a phone call where I can explain more about the study, advise on how to download and use the Ethica app if needed and ask you a few questions. I can also answer any further questions you have about the study. The call should take no longer than around 10 mins, depending on how much you would like to know about the study.

I kindly ask that we do the welcome call before you start adding your data via the Ethica app. Please can you let me know the best number to get you on and when would be a convenient time to be contacted?

Please let me know if you have any questions or queries regarding downloading these instructions or completing the survey.

Many thanks.

Kind regards

Clare

Weight stigma study – reminder to arrange welcome call and download Ethica.

Dear [Participant],
Thanks again for consenting to take part in this study.
This is a gentle reminder to arrange a welcome call. The call is to help you get started with downloading the app which provides you with the brief daily surveys, as well as to ask a few demographic questions (e.g. age, ethnicity) and explain about the study.
The call should take no longer than 10 mins.

Sometimes participants have already got started with Ethica app and daily surveys - this is great, all I would politely ask for is the demographics form to be completed (either over the telephone or online if preferred) and to know your user ID on Ethica.

You can locate the code by opening the Ethica app and then clicking the 'cog' icon in the upper right corner. This will take you to 'Settings'. At the bottom of the screen, in smaller font is your 'User ID'. Please could you let me know this code? This allows me to connect all your data and means I am able to see how you're getting on with the surveys.

Please let me know if you have any questions or queries.

Best wishes

Clare

Email: Reminder to download the app and arrange a call

Dear [Participant],

I am writing to follow up on your participation in the study.

I tried calling at XXX. I am sorry that we missed each other. Would we be able to rearrange?

Please let me know if you have any questions or queries. I am very happy to assist in any way I can.

Many thanks.

Kind regards

Clare

Email: Subject: Reminder to start daily surveys

Dear [Participant],

I am writing to follow up on your participation in the study following on from our telephone call.

Please can you complete the brief daily surveys twice a day as prompted by the Ethica app. Additionally, please complete a survey each time you experience weight stigma or a stressful event.

If the app has already started prompting you but you have not completed any surveys yet, we can reset the start data of the study for you so you can begin completing surveys for the full 14-day period.

Please let me know if you have any questions or queries. I am very happy to assist in any way I can.

Many thanks.

Kind regards

Clare

Email: Subject: Reminder to complete the daily surveys

Dear [Participant],

I am writing as a gentle reminder to complete the brief survey at the two prompts each day. Additionally, please can you complete a survey if you experience a weight-stigma event or stressful event. This will only be required over this 2-week period.

Please let me know if you are having any technical issues with the app - for example if the app is no longer sending you notifications to complete the surveys.

Get in touch if you have any questions or queries.

Many thanks.

Kind regards

Clare

Email: Subject 'Link to one final questionnaire and debrief PLUS are you interested in follow-up?'

Dear [Participant],

You have now completed the 14 days of brief daily surveys, thank you for the data you have provided. Your responses to the surveys and recording of weight stigma/stressful events are much appreciated.

There is just one more questionnaire to complete! This questionnaire is just 12-items and should only take a few minutes to do. Please follow this link to complete it: https://leeds.onlinesurveys.ac.uk/exit-questionnaire-and-debrief-final. You will also need to enter your participant code which you entered at the beginning.

After completing the questionnaire you will also be able to view the debrief for the study. This has different options depending on how you have experienced the study.

Option for additional follow-up!

We are considering a follow-up phase which would involve interviews with people to allow a more detailed exploration of experiences of weight stigma. Do you think you would be interested in participating in this study, and may we contact you with further information if it goes ahead? **Consenting to be contacted at this stage would not mean consent to take part in the follow up phase, only consent to find out more about it.**

If you are interested in taking part in this potential follow up phase, please reply yes to this email.

Please note, if you do not hear anything within the next 6 months it means we have not been able to go ahead with this phase.

If you have completed a significant amount of the surveys, you will be hearing from us soon about your online shopping voucher.

Many thanks.

Kind regards

Clare

Consent form and screening link:

https://tinyurl.com/3krcdx38

Appendix N

Participant Information Sheet and consent form for interviews

Participant Information Sheet

Exploring experiences of weight stigma in people with a higher weight: phase 2

You are being invited to take part in the second phase of our research study. Before you decide to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. You may like to refer to the previous Participant Information Sheet for more information about the study [add as hyperlink or request from lead researcher at umcpi@leeds.ac.uk].

Why have I been chosen for phase 2?

You have been chosen as you took part in phase 1 of the study which involved completing questionnaires and brief daily surveys, and you indicated your interest in further research.

What is the purpose of phase 2 of the study?

We would like to get participant feedback and further detail on the responses provided from phase 1 of the study. We would also be interested in hearing about what kind of support or interventions would be helpful for people affected by excess weight and weight stigma.

Do I have to take part in phase 2?

No, taking part is completely voluntary. If you do decide to take part, you will be asked to declare your consent to take part in this part of the study. At any time, you may ask any questions about the purpose of the research or what is expected from participants. You have the right to withdraw from the study at any time. You will not be required to give any explanation as to your decision to do so, nor will there be any penalty for this.

What do I have to do if I take part in phase 2?

Phase 2 involves a single one-to-one interview between you and the lead researcher. This interview will be conducted online using Zoom. You have the option to put your video on or keep it off, as you prefer.

The interview will last approximately 30 minutes to 1 hour. During the interview, the lead researcher will show you some graphs of your survey data from phase 1 and ask you to provide further detail, discuss your responses, and discuss other experiences of weight stigma and stress outside of the study. Additionally you will be asked about your experience taking part in the study and, if time permits, what types of support would be helpful for people affected by weight stigma.

You will be entitled to an additional £10 online shopping voucher as an incentive for completing the interview.

Use, dissemination and storage of research data from phase 2

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Data will be collected, recorded and transcribed using Zoom online video software. Zoom is GDPR compliant. The data will be downloaded from Zoom immediately following the interview and saved on university drives in line with University data protection policy.

In the event that we are unable to use Zoom, interviews would take place over the phone and be recorded using a university laptop or encrypted dictaphone, and saved immediately after the interview to university drives. These would principally be transcribed using Microsoft Word's online dictation function.

In the event of a high number of interviews, or if the online transcription is poor quality, a university approved transcription service would be used.

All interviews will be anonymised in the analysis and write up. All personal data (including recordings) will be deleted once the study is completed. After completing the interview, you are free to withdraw your interview data for up to a week post-interview.

The anonymised written transcription will be archived and stored for five years (following completion of the study) on University of Leeds drives. Other researchers may also request this data; requests will be considered on a case by case basis. In such instances, data will remain anonymised.

What are the possible disadvantages and risks of taking part?

It is possible that being asked to discuss or share some detail on your experiences of weight-based stigma and stress may be distressing.

During the course of the interview you are free to take a break or decline to answer questions. If you are negatively affected in any way you can let the lead researcher know who can signpost you to support available.

What are the possible benefits of taking part?

There are no immediate benefits for those people participating in the project. However, you will be contributing to novel research which aims to better understand weight-based stigma in all its forms so that services/interventions may better serve individuals affected.

Some people may find it helpful to discuss or share detail about their experiences.

For your time and effort for doing the interview, you will be compensated with an additional £10 online shop voucher.

What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?

The questions in the interview will briefly be around your experience of taking part in the study and using the Ethica app. The interview will involve sharing some of your data from the daily surveys and being asked to discuss these responses in more detail. You will also be asked about other experiences of weight stigma and stress, Lastly you will be asked about ideas for interventions to support people with weight stigma, and other potential areas which are important to research.

What will happen to the results of the research project?

Along with the data from the daily surveys and baseline/exit questionnaires, it is expected that the results of this study will be disseminated and shared with service providers, and that the study will be published in a peer reviewed journal.

It is hoped that this study will contribute to a greater understanding about weight stigma, which will raise awareness about this experience. Raising awareness of this topic and its impact aims to provide the foundation for changes to practice or the development of appropriate support and interventions.

Who is organising/ funding the research?

This research is part of the Clinical Psychology Doctorate training and is funded by the NHS.

Ethical review of the study

The project has been reviewed and given ethics approval by the University of Leeds Psychology School of Medicine Research Ethics Committee.

This research is being conducted by Clare Pickett (Clinical Psychologist in Training), under the supervision of Dr Rebecca Beeken (r.beeken@leeds.ac.uk) and Dr Ciara Masterson (c.masterson@leeds.ac.uk).

Contact for further information

Lead researcher – Clare Pickett – umcpi@leed.ac.uk

Thank you for taking the time to read through this information sheet. Please seek further information from the lead researcher should you have any further questions now or at any point in the study.

If you would like a copy of this Participant Information Sheet, please contact Clare.

Further guidance is available at http://ris.leeds.ac.uk/involvingresearchparticipants and at https://dataprotection.leeds.ac.uk/information-for-researchers.

Project title	*Document type*	*Version #*	*Date*
Understanding day-to-day internalised weight stigma in people with a higher weight.	PIS	1	18.01.2021

Participant Consent Form

Consent to take part in: Exploring experiences of weight stigma in people with a higher weight – phase 2: semi-structured interviews

I confirm that I have read and understand the Participant Information Sheet explaining the research project and I have had the opportunity to ask questions about the project.
I understand that my participation is voluntary and that I am free to withdraw my participation at any time without giving any reason. I understand there will be no negative consequences for doing so. In addition, should I not wish to answer any particular question or questions, I am free to decline. If I do decide to withdraw, I understand my personal data given will be deleted. However, under the principle of 'public task' in the Data Protection Act I understand that my anonymised survey data will not be deleted.
I understand that members of the research team may have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. I understand that my responses will be kept strictly confidential.
I understand that the data collected from me may be stored and used in relevant future research in an anonymised form
I understand that relevant sections of the data collected during the study, may be looked at by individuals from the University of Leeds or from regulatory authorities where it is relevant to my taking part in this research.
I agree to take part in the above research project and will inform the lead researcher should my contact details change.

If you wish to give you consent to take part in the study, please type your name here _________
By typing your name you are confirming you have read the above information and consent to take part in the study.

Project title	*Document type*	*Version #*	*Date*
Understanding day-to-day internalised weight stigma in people with a higher weight.	Consent form	1	18.01.2021

Appendix O

Example of individualised interview schedule

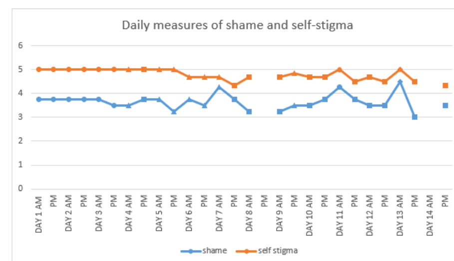
Semi-structured interview guide

Preamble

1. Introductions
2. assurance about confidentiality my end
3. My role is to ask questions, probe, signpost if necessary, some q's may be things you've never considered before, take time, no pressure to answer all q's, pass if prefer to, asking about sensitive things, if emotion comes up that's fine and totally appropriate as talking about emotive things, I will be guided by you and can signpost if you need further support
4. Opportunity to ask questions, clarify q's
5. Permission to record interview and check again regarding consent
6. RECORD ZOOM, RECORDER, TRANSCRIBE
7. Explanation of what we are interested in and what we hope to gain from the interview, how long it will take etc.
   a. We are interested in the psychological impact of experiences of weight stigma, specifically if it brings up feelings of shame, or affects the way people speak to themselves about their weight, speaking to themselves in a blaming and critical way, this is what we mean by self-stigma.
   b. We are also interested in understanding if/how people's shame and self-stigma thoughts and feelings changes depending on whether they've experienced weight stigma,
   c. How about a stressful event, or a neutral event

Follow up questions to Ethica survey data

**SHARE SCREEN FOR GRAPHS



Using the graphs as a prompt for discussion, ask participants about their experiences.

In the daily surveys we asked about weight stigma events and stressful events. The other questions related to your thoughts and feeling about a type of shame which is when you think or perceive that others are thinking badly of you, for example you feel like they see you as having failures or flaws. (blue line)

We also measured a specific aspect of self-stigma which is where you think in a stigmatising way about yourself and your relationship with your weight. (orange line)

We were interested in if and how these things changed over the period and were impacted by the events you experienced.

So this graph shows the 14 days of surveys along the bottom, and then your scores of shame and self-stigma as measured by the questions on the survey.

The circles indicate when you indicate a weight stigma event which was also stressful, the triangle indicates a weight stigma event only, square for neutral and diamond for stressful only.

Questions on participants own data (10 mins)

Your graph suggests generally these scores relatively stay the same over time with some small fluctuations. Does that reflect your experience?

Second line, Suggestion that your scores drop following neutral event (squares), with scores rising again slightly after a weight stigma or stressful event, does that reflect your experience?

Would you say there is a relationship between your experiences of weight self stigma and shame, and external weight stigma events? How do they seem related to you?

Events (10 mins)

This participant completed the surveys in [August]. Can you remember any particular events during that time?

If they can recall, ask them to tell me about the types of things that were happening in their life at that time.

I'd like to ask you about specific events that happened at that time, if you can recall, and how they made you feel.

e.g. Personal reminders of your weight, assumptions made by others, nasty/inappropriate comments, discrimination, exposure to social media/news, structural/physical barriers

ASK: How did that event/that time (or those kinds of events generally) affect how you thought and felt about yourself [in terms of how you felt others saw you and judged you and how you felt about your weight?] (Is that quite typical for you?)

First few days, ticked yes to all – was that a reflection of more historical events rather than recent?

If can't recall: how do weight stigma events/occurrences like this (e.g. others making assumptions about you) generally affect how you think and feel about yourself?

ASK: Did these events affect you differently in terms of how you thought and felt about yourself and your weight, and in terms of how judged you felt by others? (How)

Or more generally, how do weight stigma events such as (e.g. discrimination, comments from others, personal reminders about your weight) impact how you think and feel about yourself, or how you think and feel others see you?

Over the 14 days of surveys you reported [14] events of weight stigma. Would you say that typically reflects how often you experience weight stigma or is that lower/higher than what you would expect?

You reported on Day 13 an event which was stressful only.

ASK: How do stressful events not related to your weight affect you in terms of how you thought and felt about yourself and your weight, and in terms of how judged you felt by others?

Or generally, how do stressful events not related to your weight affect how you think and feel about yourself and your weight?

You reported some neutral events (no weight stigma, stressful event).

ASK: How did these events affect you in terms of how you thought and felt about yourself and your weight, and in terms of how judged you felt by others?

Or: how does how you think and feel about yourself change in relation to what is happening in your life?

Questions on a recent event of stigma and their response (15 mins)

Can you recall a specific, more recent weight stigma event. Can you talk me through what happened and the impact it had on you in terms of your thought pattern, subsequent behaviour and how long that event stayed with you?

Do events like that linger with you for a while – has that always been the case? Do you remember when that started?

Can you talk a bit more about how you typically feel when you experience weight stigma events? Do certain types of stigma make you feel different?

Responses to stigma (10 mins)

When you experience something which makes you feel bad about your weight, what is your internal response i.e. what thoughts or feelings come up for you?

How do you manage the effect that weight stigma events have on you?

When those kind of things happen, are there things that you do to try to make yourself feel better?

How able do you feel to show yourself self-compassion after events of weight stigma?

Cf. self-compassion definition – showing yourself the care and kindness you would to a good friend; not giving yourself a hard time when you are feeling upset but rather being kind, reassuring and non-judgemental

Reflect self-criticism score from baseline q – may suggest a tendency to be quite critical of yourself – are you generally quite critical about other things about yourself? Can you tell me about that, has it always been like that? [or does self-criticism tend to only revolve around weight?]

When did you first notice the way you spoke to yourself about your weight?

Previous key events of weight stigma (5 mins)

Are there any key things that have happened to you in your life that we didn't pick up on in this survey that have really stayed with you or impacted you in any way? Can you tell me what that was like and how it affected you?

Impact of taking part and reporting on these events (5 mins)

How did taking part in the study and reporting on these experiences affect you? How easy/difficult was it to notice or identify weight stigma events or stressful events?

And how do you feel talking about these experiences now?

Closing remarks and thanks

1. Is there anything else I should have asked you about, or anything that's important to add?
2. Explain how data from this interview will be used, reassure about anonymity, but anonymous quotes may be included in the final paper
3. Ensure participant has contact details of researcher
4. Thank participant for their time

Appendix P

Ethical approval for original study and amendment

RE: MREC 20-062 - Ethics Application - APPROVED - Clare Pickett - Outlook - Google Chrome

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RE: MREC 20-062 - Ethics Application - APPROVED

To: Clare Pickett <umcpi@leeds.ac.uk>
Cc: Medicine and Health Univ Ethics Review <FMHUniEthics@leeds.ac.uk>
Subject: MREC 20-062 - Ethics Application - APPROVED

Dear Clare

MREC 20-062 - Exploring experiences of weight stigma in people with a higher weight

NB: All approvals/comments are subject to compliance with current University of Leeds and UK Government advice regarding the Covid-19 pandemic.

I am pleased to inform you that the above research ethics application has been reviewed by the School of Medicine Research Ethics (SOMREC) Committee and on behalf of the Chair, I can confirm a favourable ethical opinion based on the documentation received at date of this email.

Please retain this email as evidence of approval in your study file.

Please notify the committee if you intend to make any amendments to the original research as submitted and approved to date. This includes recruitment methodology; all changes must receive ethical approval prior to implementation. Please see https://ris.leeds.ac.uk/research-ethics-and-integrity/applying-for-an-amendment/ or contact the Research Ethics Administrator for further information fmhuniethics@leeds.ac.uk if required.

Ethics approval does not infer you have the right of access to any member of staff or student or documents and the premises of the University of Leeds. Nor does it imply any right of access to the premises of any other organisation, including clinical areas. The committee takes no responsibility for you gaining access to staff, students and/or premises prior to, during or following your research activities.

Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, risk assessments and other documents relating to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited.

It is our policy to remind everyone that it is your responsibility to comply with Health and Safety, Data Protection and any other legal and/or professional guidelines there may be.

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RE: MREC 20-062 Amendment August 2021 - Approval - Clare Pickett - Outlook - Google Chrome

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RE: MREC 20-062 Amendment August 2021 - Approval

From: Rachel Prinn <R.Prinn@leeds.ac.uk>
Sent: 15 September 2021 10:23
To: Clare Pickett <umcpi@leeds.ac.uk>
Cc: Medicine and Health Univ Ethics Review <FMHUniEthics@leeds.ac.uk>
Subject: MREC 20-062 Amendment August 2021 - Approval

Dear Clare

MREC 20-062 Amendment August 2021 - Exploring experiences of weight stigma in people with a higher weight

NB: All approvals/comments are subject to compliance with current University of Leeds and UK Government advice regarding the Covid-19 pandemic.

I am pleased to inform you that the above research ethics application amendment has been reviewed by the School of Medicine Ethics Committee and I can confirm a favourable ethical opinion based on the documentation received at date of this email.

Please retain this email as evidence of approval in your study file.

Please notify the committee if you intend to make any further amendments to the research as submitted and approved to date. This includes recruitment methodology; all changes must receive ethical approval prior to implementation. Please see https://ris.leeds.ac.uk/research-ethics-and-integrity/applying-for-an-amendment/ or contact the Research Ethics & Governance Administrator for further information fmhuniethics@leeds.ac.uk if required.

Ethics approval does not infer you have the right of access to any member of staff or student or documents and the premises of the University of Leeds. Nor does it imply any right of access to the premises of any other organisation, including clinical areas. The committee takes no responsibility for you gaining access to staff, students and/or premises prior to, during or following your research activities.

Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, risk assessments and other documents relating to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited.

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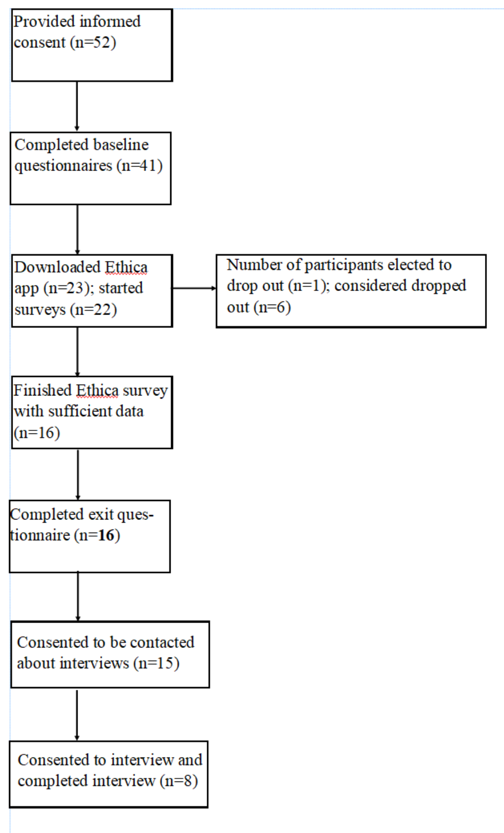
Appendix Q

Recruitment numbers flow chart



Appendix R

Interview participants' scores on baseline and exit measures

Participant	EISS (total sum)	FSCSR Self-criticism (sum)	FSCSR Reassured self (sum)	PSS (sum)	SCS-SF (mean)	WSSQ (total sum) Pre-survey	WSSQ (total sum) Post survey
Ivy	22 (high)	33 (high)	9 (low)	24 (high)	2.5 (low)	45 (high)	49 (high)
June	25 (high)	33 (high)	6 (low)	31 (high)	3.17 (high)	48 (high)	42 (high)
Kim	23 (high)	56 (high)	1 (low)	27 (high)	1.75 (low)	55 (high)	56 (high)
Lola	8 (low)	14 (low)	23 (high)	16 (low)	3.92 (high)	43 (high)	38 (high)
May	24 (high)	46 (high)	13 (low)	28 (high)	2.83 (low)	57 (high)	58 (high)
Nelle	18 (high)	21 (low)	21 (high)	15 (low)	3.17 (high)	32 (high)	36 (high)
Orla	20 (high)	21 (low)	9 (low)	20 (low)	2.58 (low)	54 (high)	52 (high)
Polly	19 (high)	40 (high)	12 (low)	19 (low)	2.67 (low)	51 (high)	43 (high)

Note. For further details on calculation of scores, including high and low categorisation, see Appendix C