Journal of Personality and Social Psychology

Living While Fat: Development and Validation of the Fat Microaggressions Scale

Megan R. Lindloff, Angela Meadows, and Rachel M. Calogero

Living While Fat: Development and Validation of the Fat Microaggressions Scale

Megan R. Lindloff[1], Angela Meadows[2], and Rachel M. Calogero[1]
[1] Department of Psychology, University of Western Ontario
[2] Department of Psychology, University of Essex

Fat microaggressions are microlevel social practices in the form of commonplace everyday indignities that insult fat people and have been documented anecdotally and qualitatively. However, no psychometrically validated scale exists for measuring fat microaggressions, despite decades of microaggression research demonstrating their negative health associations. This research describes the development and construct validation of the Fat Microaggressions Scale across four studies. Study 1 focused on item development through a systematic review, qualitative analysis of Tweets using #fatmicroaggressions, and a Delphi review. Study 2 ($N = 343$) determined that a four-factor structure was appropriate in an online community sample of fat adults. Study 3 ($N = 410$) confirmed the factor structure in a new online sample of fat adults and provided initial evidence of construct validity. Study 4 ($N = 197$) found evidence of test–retest reliability and demonstrated additional construct validity. Our findings offer a newly validated quantitative measure of fat microaggressions and an initial framework for naming and categorizing these experiences, which may be used to advance the study of fat microaggressions.

Keywords: fat microaggressions, weight stigma, everyday discrimination, indirect discrimination, benevolent weightism

Fat[1] people are frequent targets of recurrent fat stigmatization (Gerend et al., 2021; Spahlholz et al., 2016; Vartanian et al., 2018), with one daily diary study of fat women reporting an average of three stigmatizing events every day (Seacat et al., 2016). Fat people are subject to negative stereotypes that depict them as lazy, ugly, stupid, or lacking self-discipline and self-control (Puhl & Brownell, 2006; Puhl &

Correspondence concerning this article should be addressed to Angela Meadows, Department of Psychology, University of Essex, Colchester CO4 3SQ, United Kingdom. Email: a.meadows@essex.ac.uk

Heuer, 2009), and antifat stereotyping has been observed in preschool-age children as young as 3 years old (Cramer & Steinwert, 1998; Harriger et al., 2010). Viewed as justifiable and even necessary (Puhl & Heuer, 2010), fat stigma occurs through interpersonal experiences (e.g., rude comments or assumptions, bullying, and social exclusion) as well as the built environment (e.g., inadequately sized seating or clothing; Gerend et al., 2021) across a variety of contexts (e.g., relationships, work, school, health care, therapy, the military, the criminal justice system; Meadows et al., 2020; Puhl & King, 2013; Schvey et al., 2017) and from a variety of sources (e.g., friends, family, health care providers, coworkers, strangers, media; Puhl & Heuer, 2009). Overall, weight discrimination is a common experience for fat people and escalates for individuals as weight increases (Spahlholz et al., 2016). Indeed, fat stigma is described as "everywhere" and "unavoidable" by the targets of these experiences, who often believe that they deserve this prejudicial treatment and rarely challenge it (S. Lewis et al., 2011).

Consistent with decades of research that links experiencing discrimination to negative health outcomes (Pascoe & Smart Richman, 2009; D. R. Williams et al., 2019), fat stigma has detrimental mental, behavioral, and physiological health impacts. Fat stigma is connected to a host of negative mental health consequences, including depression, anxiety, negative self-esteem, and body image dissatisfaction (Emmer et al., 2020; Puhl & Heuer, 2009; Wu & Berry, 2018), as well as feelings of social isolation, rejection, and shame (S. Lewis et al., 2011). Behaviorally, people who are stigmatized for their weight are more likely to utilize

---

[1] The word "fat" is used in the sense of a value-neutral descriptor, in line with the preferences of organizations that advocate for fat rights. This usage "reclaims" the word and strips it of its acquired pejorative overtones, signaling that fatness is neither unacceptable nor inferior (Meadows & Daníelsdóttir, 2016).

maladaptive coping strategies, such as disordered eating, binge eating, or skipping meals (Hunger & Tomiyama, 2018), self-social isolation (S. Lewis et al., 2011), and reduced participation in physical activity (Meadows & Bombak, 2019; Zhu et al., 2022). The physiological consequences of fat stigma include increased physiological stress, such as increased heart rate, blood pressure, and levels of cortisol (Hunger et al., 2015), metabolic dysregulation and systemic inflammation (Vadiveloo & Mattei, 2017), and an increased risk of diabetes (Wu & Berry, 2018). Tomiyama (2019) proposed a feedback loop whereby fat stigma induces a stress response, activating various cognitive, behavioral, physiological, and biochemical pathways in the body. Importantly, it is not just the singular experience of weight discrimination that induces stress, but the cumulative harm of fat stigma in everyday life that creates a hostile environment that serves as a perpetual and prolonged source of stress for people living in fat bodies (Tomiyama, 2019).

Importantly, living in a society that continually devalues and stigmatizes fat people may also cause people to internalize antifat attitudes and devalue themselves, a phenomenon termed internalized weight stigma (Durso & Latner, 2008). One meta-analysis found that internalized weight stigma was more strongly linked to negative mental health than experienced weight stigma (Emmer et al., 2020), and internalized weight stigma is a frequent mediator of the association between experienced weight stigma and negative health outcomes and reduced well-being (Bidstrup et al., 2022; Hayward et al., 2018; O'Brien et al., 2016). The role of internalized stigma as a mediator between experienced stigma and health is also an important component of the minority stress model, which was developed as a theoretical framework to explain the health disparities observed among sexual minorities and posits that possessing a minority status is associated with chronic stress stemming from discrimination (Hatzenbuehler, 2009; Meyer, 2003). Chronic minority stress can lead to additional stressors, including rejection sensitivity and internalized stigma, which in turn negatively affect health outcomes. Given the ubiquity of antifat attitudes, the minority stress model has also been applied in the context of fat stigma to explain health disparities observed among fat people (Sikorski et al., 2015; Tomiyama, 2014).

Though the area of fat stigma research has expanded considerably in the past 15 years, the measurement of experienced fat stigma requires further critical examination. In 2012, a review of experienced fat stigma measures identified several limitations of the existing tools, including the narrow samples used to validate the measures (e.g., majority White and/or women), a focus on interpersonal interactions at the expense of stigma perpetuated via other sources, such as the media, a lack of rigor in reporting evidence for the psychometric properties and validity of the measures, and a lack of theory-driven measurement (DePierre & Puhl, 2012). An additional systematic review that focused on the psychometric properties of fat stigma scales noted that psychometric validation of these scales was rare (Papadopoulos et al., 2021). The most comprehensive measure of experienced weight stigma currently in use is the Stigmatizing Situations Inventory (SSI; Myers & Rosen, 1999); however, the scale is now over 20 years old and suffers from many of these limitations. Though acknowledged more than a decade ago, these problems and limitations have gone largely uncorrected, prompting calls for improvements in both the development and validation of fat stigma measures (Lindloff & Meadows, 2023; Papadopoulos et al., 2021).

Microaggressions Framework

Microaggressions, a term originally coined by Chester Pierce to explain a specific form of everyday discrimination experienced by Black people from White Americans (Pierce, 1970; Pierce et al., 1978), are characterized as brief, everyday acts and exchanges of prejudice that demean members of stigmatized groups, keep them in a constant state of defense, and "reinforce pathological stereotypes and inequitable social norms" (M. T. Williams, 2020, p. 4). Notably, Pierce intended "micro" to reflect the everyday and commonplace occurrence of these acts and not that they are less harmful (Torino et al., 2019). It is the mundane quality of these experiences, whether blatant or subtle, that defines and distinguishes microaggressive acts from other forms of discrimination. Microaggressions can be (but are not always) unintentional on the part of perpetrators, and are sometimes not easily recognized as a form of prejudice, making these experiences difficult to interpret and confront and easy for perpetrators to deny and thus avoid responsibility (Costa et al., 2022; Sue et al., 2007).

Building on Pierce's seminal work, Sue et al. (2007) proposed that microaggressions fall into three overarching categories. *Microassaults* are deliberate and overt acts of discrimination, such as name-calling or using racial slurs, not wanting to sit next to a stigmatized group member on a plane, or displaying a swastika (Sue et al., 2007; Torino et al., 2019). This type of microaggression can be distinguished from other acts of discrimination, such as hate crimes, which are illegal, typically violent, and often intended to cause physical harm (Torino et al., 2019), as well as macroaggressions, which refer to systemic forms of oppression (Pérez Huber & Solórzano, 2015). *Microinsults* are more subtle and less deliberate, characterized by forms of communication that insult members of a target group, such as making rude jokes or other insensitive comments, using racist tropes, or behaviors such as a salesperson following a person of color around a store, which implies that they are criminals who will steal if not watched (Bryant-Davis, 2019; Stack, 2018). *Microinvalidations* are also more subtle and characterized by dismissing and downplaying the feelings and experiences of members of the target group, such as proclaiming "color-blind" attitudes or admonishing people for being "too sensitive" when discussing their experiences of discrimination (Sue et al., 2007).

While racial microaggressions have received the most scholarly attention (Lui & Quezada, 2019), the microaggression framework has been applied widely to understand and study everyday discrimination experienced by many stigmatized groups and individuals, including the lesbian, gay, bisexual, transgender, and queer (LGBTQ) community (Nadal et al., 2016; Platt & Lenzen, 2013), people with disabilities (Conover et al., 2017; E. J. Lee et al., 2019), religious minorities (Nadal et al., 2012), individuals with mental health conditions (Barber et al., 2020; Peters et al., 2017), women of color (Keum et al., 2018; M. G. Williams & Lewis, 2019), sexual minorities with physical disabilities (Conover & Israel, 2019), and LGBTQ people of color (Bowleg, 2013; Sadika et al., 2020). For any member of these groups, being the target of microaggressions is associated with serious detrimental outcomes (see Costa et al., 2022; Lui & Quezada, 2019). Studies have found that racial microaggressions are associated with depressive symptoms and suicidal ideation (O'Keefe et al., 2015), poorer sleep quality (Ong et al., 2017), cognitive depletion (Banks & Landau, 2022), and physical health problems (e.g., pain,

fatigue; Nadal et al., 2017). LGBTQ microaggressions have been linked to lower self-esteem (Kaufman et al., 2017; Seelman et al., 2017), higher stress and anxiety (Seelman et al., 2017; Wike et al., 2023), depressive symptoms (Kaufman et al., 2017; Woodford et al., 2015), substance abuse (Winberg et al., 2019), and posttraumatic stress (J. L. Robinson & Rubin, 2016). Among people with disabilities, microaggressions have been associated with stress (Conover et al., 2017), anxiety (Kattari, 2020; Lett et al., 2020), and depression (Conover et al., 2017; Kattari, 2020; Lett et al., 2020). Across different stigmatized groups, microaggressions perpetrated by health care providers can lead patients to subsequently avoid seeking health care, compounding existing health disparities (M. Williams & Halstead, 2019).

Although ample empirical evidence exists to confirm that microaggressions are well-defined experiences that can be assessed reliably via individuals' subjective reports (M. T. Williams, 2020), the concept of microaggressions and the scientific rigor underlying their study have been criticized (Lilienfeld, 2017). For example, it has been argued that microaggression research suffers from measurement limitations, relying heavily on self-report from the perspective of the target (Lilienfeld, 2017). Indeed, microaggression research does rely on the perspective of the target of the microaggression to understand them, and this perspective would appear to be valid, as both perpetrators and targets can recognize various racial microaggressions when they occur and interpret them as unacceptable (Michaels et al., 2018; M. T. Williams, 2020). In addition, well-developed scales with good psychometric properties exist for measuring various forms of microaggressions, including racial (Nadal, 2011; Torres-Harding et al., 2012), LGBTQ (Nadal, 2019; Woodford et al., 2015), and ableist microaggressions (Conover et al., 2017). It is also worth noting that much of the field of psychology relies on subjective self-report measures—the validity of such measures is corroborated when they are associated with objective outcome measures, for example, markers of biological stress, performance, or behaviors, as is clearly seen with self-reports of microaggressions.

As another criticism, it has been proposed that the targets of microaggressions are hypersensitive, or that negative affect explains the relationship between microaggressions and negative health outcomes (Haidt, 2017; Lilienfeld, 2017). Research has countered this suggestion, however, demonstrating that stigmatized group members are not hypersensitive to microaggressions but rather simply experience them more frequently (West, 2019), and that the frequency of racial microaggressions remains a significant predictor of psychopathology after controlling for negative affect (M. T. Williams et al., 2018). Further, the fact remains that while individual differences in personality or prior experience may result in different interpretations of any singular microaggression, a microaggression, by definition, is an act or contextual signal that uniquely draws on the unequal status of certain groups in society, thus performing a functional role in maintaining a narrative of structural inequality that is not dependent on the response of a given observer (McTernan, 2018).

Overall, despite the serious consequences of microaggressions for people's well-being and lived experiences, microaggressions are often overlooked or dismissed when attention is called to them, which serves as a microaggression in and of itself. Such dismissals both invalidate the target's lived experience and deny them as credible sources of knowing (Fatima, 2019; Johnson et al., 2021), underscoring the importance of naming and identifying these experiences to effectively address them (Hodson, 2021; Sue et al., 2007).

Naming Fat Microaggressions

One area of microaggression research that warrants attention is that of fat microaggressions, which directly target fat people and for which there is a dearth of research. Munro (2017) noted that while there is a robust literature on weight stigma and discrimination, there has been little quantitative research that is explicitly focused on fat microaggressions and called for the microaggressions framework to be applied in this domain. We aim to address this call in the current research. We propose that fat microaggressions are characterized by the same features as other microaggressions, in that they are recurrent and commonplace features of our everyday environments and distinguished by the content of the discriminatory acts (often subtle) that are related to body size and weight. Naming these daily and often ambiguous instances of fat stigma as fat microaggressions recognizes both the burden and the pervasiveness of these everyday indignities for fat people.

Some evidence from qualitative studies of fat microaggressions supports their pervasiveness and commonplace occurrence in everyday life among women in therapy (Akoury et al., 2019), employees in higher education (Hunt & Rhodes, 2018), and people across environmental settings and public spaces (Owen, 2012). Participants in these studies were fat people who described everyday experiences of being ignored and isolated from others, being shamed and embarrassed, being prescribed unsolicited exercise and eating advice to lose weight, and not being able to exist or participate comfortably across a variety of settings. For example, one woman discussed her therapist ignoring her mental health concerns, insisting that she would feel better if she only lost weight (Akoury et al., 2019), leaving her feeling "terrible" and "worse about myself than I already did" (p. 102). Employees in higher education discussed feeling condescended to and embarrassed due to weight shaming by their colleagues and supervisors, with one supervisor giving their employee a book on weight loss even after the employee expressed that it was unwanted (Hunt & Rhodes, 2018). The frequent exclusion caused by inadequate seating in daily life, including in therapy waiting rooms (Akoury et al., 2019), on public transportation, and in restaurants or theaters (Owen, 2012) represent environmental microaggressions that have led some people to avoid going out in public (Owen, 2012). As one participant noted, the totality of fat microaggressions makes even the simple act of grocery shopping an "exercise in courage" (Owen, 2012, p. 297).

Research on fat stigma more broadly also provides evidence for fat microaggressions. For example, "concern trolling" is a microaggression that refers to the act of shaming people for their body size and reminding them their body size is unacceptable under the guise of being concerned for the person's health (Holi, 2019; Leung et al., 2024). Other examples include backhanded compliments or comments that appear to be encouraging, such as applauding a fat person for working out, which are superficially benevolent but actually reinforce the pervasive belief that being fat is unacceptable and fat bodies should be eradicated (Reiheld, 2020) and implies that weight loss is the only reason that a fat person would exercise or even that a fat person exercising is a remarkable event (Leung et al., 2024). Everyday environmental cues also communicate to fat people that the world was not built for them, such as the lack of accessible seating on public transportation or in theaters, weight limits on exercise equipment, or medical devices such as blood pressure cuffs being too small (Owen, 2012). While rarely explicitly recognized and named as fat microaggressions, instances such as these reflect the

everyday experience of fat people in an environment that is constantly signaling their deviance.

Overview of Current Research

Grounded in this prior work, we propose that the microaggression framework provides an ideal conceptual model to capture the unique everyday forms of discrimination experienced by fat people. Weight-inclusive principles and practices that aim to counter fat stigma and discrimination require explicit attention to eliminating fat micro-aggressions from people's everyday lives and environments (Tylka et al., 2014). With this goal in mind, the present article advances the literature by providing evidence for fat microaggressions as a distinct experience of weight stigma among fat people and its connection to stress, mental and physical health, and restrictions on everyday social behavior. Specifically, we present evidence for the construct validation of a Fat Microaggressions Scale (FMS) through tests of scale and theory validation across four studies (see Table 1), which also responds to the call for more rigorously constructed measurement scales in the field of social psychology (Flake et al., 2017). In Studies 1a and 1b, we developed the initial item bank from a systematic review of the literature (Lindloff et al., 2024) and a content analysis of the #fatmicroaggressions hashtag on Twitter (Leung et al., 2024). The use of an existing data corpus provided an ecologically valid source of lived experiences, without requiring members of a marginalized group to reexperience their trauma de novo (Ashline, 2020). Resulting items then underwent a Delphi review with a panel of subject experts. In Study 2, we used exploratory factor analysis (EFA) to determine the structure and item pool for the initial version of the FMS. In Study 3, we confirmed the factor structure of the FMS, examined the construct validity of the scale, and tested a series of models linking fat micro-aggressions to voluntary restrictions on everyday social activities because of body size. In Study 4, we further examined the construct validity of the scale and tested a series of models linking fat microaggressions to depression, anxiety, and trauma symptoms. All studies involving human participants were approved by the Western University Human Research Ethics Board.

Table 1
Overview of Validity Evidence Across the Four Studies

Type of validity	Study 1	Study 2	Study 3	Study 4
Substantive validity				
Item generation	X			
Expert review of items	X			
Structural validity				
EFA		X		
CFA			X	
Reliability				
Internal consistency		X	X	X
Test–retest reliability				X
External validity				
Criterion-related validity			X	X
Incremental validity			X	X
Known groups validity			X	
Tests of mediation			X	X

Note. EFA = exploratory factor analysis; CFA = confirmatory factor analysis.

Transparency and Openness

All data, code, and research materials for Studies 1–4 are available at https://doi.org/10.17605/OSF.IO/9NPG2. We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures for each study. The design and analyses for these studies were not preregistered.

Study 1: Item Development and Consensus

The aim of Study 1 was to develop an initial set of scale items and was carried out in two phases. In the first phase, we generated an initial pool of items from three sources: (a) existing measures of experienced weight stigma, (b) qualitative studies that reported on fat microaggressive experiences, and (c) Tweets that used the #fatmicroaggressions hashtag on Twitter. In the second phase, we used the Delphi technique to subject the pool of items to expert review and consensus involving a panel of 10 activists and scholars with lived experience and established expertise in the field.

Study 1: Method
Item Development

We began by collating items from measures of experienced weight stigma included in a systematic review conducted by DePierre and Puhl (2012). An updated literature review was then conducted for any additional weight stigma measure published since 2012 and thus not included in the previous review, and their items were added to the initial item pool, resulting in a total of 391 items. Second, three qualitative studies that specifically investigated fat microaggressive experiences were reviewed (Akoury et al., 2019; Hunt & Rhodes, 2018; Owen, 2012), and 23 items were written to capture the experiences described. Third, Tweets that used #fatmicroaggressions, a Twitter hashtag created by blogger Melissa McEwan in late 2013, were reviewed. Thousands of Tweets were compiled and categorized for a content analysis conducted by Leung et al. (2024). The content analysis developed 14 categories of fat microaggressions according to their context, environment, or source (e.g., all Tweets related to comments about eating habits, diets, or exercise were grouped together and labeled "Diet and Fitness;" all Tweets related to microaggressions occurring on television, social media, or adver-tisements were categorized as "Media"). A total of 95 scale items were then created from the Tweets and reflected one of the 14 types of fat microaggressions: (1) assumptions, (2) concern trolling, (3) desirability, (4) devaluation, (5) diet and fitness, (6) employment, (7) environmental, (8) fat talk, (9) fashion, (10) health, (11) humor, (12) media, (13) public property, and (14) research.[2] See Leung et al. (2024) for a description of each category and examples of Tweets using the #fatmicroaggressions hashtag. In total, the initial item pool for the FMS included 509 items.

Though we attempted to categorize items according to Sue et al. (2007) microaggression framework (i.e., microassault, microinsult, or microinvalidation), many of the items could not be readily distinguished in this way. Therefore, we coded the 509 items across all three sources using the 14 categories described above. After

---

[2] At the time of item development, Tweets had been coded into these 14 categories; later revisions resulted in changes to the included categories (Leung et al., 2024).

all items were categorized, the initial item pool was reviewed again to determine items for elimination by assessing relevance and redundancy. We aimed to retain at least 10 items to represent each of the 14 categories to ensure representation across dimensions. The final item pool from Study 1a included 197 items drawn from existing measures of weight stigma ($n = 84$), qualitative studies ($n = 6$), and Tweets at #fatmicroaggressions ($n = 107$).

Delphi Technique

The second phase of this research applied the Delphi method, a technique that seeks input from subject experts during the early stages of scale development to improve item validity (Chalmers & Armour, 2019). We sought feedback from a panel of experts for the purpose of revising, adding, and/or deleting items from the item pool. The expert panel members were fat people with lived experience, including fat activists and weight stigma researchers. Twenty-four people were approached, and 10 people agreed to participate in the expert panel. This number was deemed sufficient based on the accepted standard minimum panel size of seven (Chalmers & Armour, 2019). We intentionally reached out to members from underrepresented groups to ensure diversity across racial, gender, sexual, disability, and body size identities across the fat spectrum to represent the range of lived experiences and intersectional microaggressions that might otherwise be missed. The final panel consisted of man-, woman-, and non-binary-identified experts from Canada, the United States, and the United Kingdom, over half of whom publicly identify as queer, as well as several who identify as people of color, disabled, and/or "superfat," a term referring to bodies at the higher end of the fat spectrum (described further below). The reviewers were compensated with C$20.

For each of the 197 items, experts were asked to rate how important it was for that item to be included in a measure of fat microaggressions using a 5-point Likert-type response scale: 1 (*do not include*), 2 (*unimportant*), 3 (*do not know/depends*), 4 (*important*), and 5 (*essential*). The panel also had the opportunity to provide comments or suggestions for each item to improve the wording and clarity of the item and to suggest additional items. Overall, feedback on the items was positive, with most items having a very high rate of endorsement for inclusion in a new measure of fat microaggressions. However, the panel indicated that the items comprising the Research category would likely not be relevant to most people, so all items from this category and the category itself were removed ($n = 10$), resulting in a total of 13 categories. Next, items that received at least one "do not include" rating were removed ($n = 6$). Reasons given by the panel members for not including an item included overlap with another item, the experience described in the item was too specific and not common enough, or the item was not sufficiently specific to being fat. Next, some panel members commented on additional similarities between items, and these redundant items were removed ($n = 14$). To further reduce the item pool, items that had at least two "unimportant" ratings were removed ($n = 3$).

Based on the ratings and feedback, 33 total items were removed. Due to the high rate of consensus and endorsement of the remaining items, we decided it would not be productive to conduct a second round of review. Reviewers also suggested new ideas based on their lived experience that were not represented among the items (e.g., other negative ways fat characters are portrayed in the media, assumptions of poor hygiene or disability, and public disgust),

resulting in the development of 13 additional items. At the end of this process, the preliminary version of the FMS consisted of 177 items.

Study 1: Discussion

Culling from published weight stigma measures, qualitative fat microaggression studies, and a content analysis of Tweets at #fatmicroaggressions, we produced a preliminary set of items for a novel measure of fat microaggressions. We obtained feedback on the items from a group of fat studies scholars and activists with lived experience through a Delphi review. This feedback led to the removal of redundant or irrelevant items and the addition of items deemed important for measuring fat microaggressions that were not already covered. Upon completion of this process, we had a preliminary version of the FMS with 177 items across 13 categories of microaggressions to be subjected to rigorous factor analysis and validation in the subsequent studies.

Study 2: EFA

To determine the factor structure, the 177-item FMS was subjected to an EFA in a community sample of fat adults. Given the sheer dearth of theoretical and empirical work on fat microaggressions, it was expected that the FMS items would adhere to a multidimensional solution approximating the 13 categories used in Study 1 (Hypothesis 1), and because microaggressions are conceived as regular experiences in the lives of fat people, the items would be internally consistent (Hypothesis 2).

Study 2: Method

Participants and Procedure

A total of 343 fat adults ($M_{age} = 35.88$, $SD = 12.04$) living in either Canada or the United Kingdom were recruited online via Prolific, an online research platform that provides access to a high-quality participant pool (see Table 2, for full demographic information for Studies 2–4). This sample size exceeds the requirement for an adequate sample of 200–250 participants for EFA, given moderately optimal data (Sakaluk & Short, 2017). Participants were invited to participate in a study about "weight-related experiences in everyday life." Using the prescreening options on Prolific, the study was advertised to potential participants living in Canada or the United Kingdom who had previously self-identified as "slightly overweight," "overweight," or "very overweight." Recruitment was balanced across women and men; further, different racial groups were specifically targeted to ensure greater racial diversity among the sample.

Participants opened the link in Prolific to view the survey in Qualtrics. Once they consented, they were asked to self-classify their weight again in case their weight no longer matched with the information they had provided previously in Prolific. If the participant selected "underweight" or "average weight," the participants were thanked for their interest, and the survey ended. If they selected "a little overweight," "very overweight," or "obese,"[3] they were able to

---

[3] The words "overweight" or "obese" were used in the questionnaire without inverted commas, as they are widely recognized and accepted. However, as weight stigma researchers working toward reducing stigma within the scientific community, we place them in inverted commas in this article to indicate contestation of the medicalization of body weight and the social construction of the disease narrative (Calogero et al., 2016).

Table 2

Overview of Demographic Information Across Three Studies

Demographic variable	Study 2 (N = 343)	Study 3 (N = 410)	Study 4 (N = 197)
Age			
M (SD)	35.88 (12.04)	37.07 (12.41)	40.54 (12.90)
Age range	18–72	18–77	18–77
Ethnicity/race			
White	98 (28.6%)	177 (43.2%)	80 (40.6%)
Black	85 (24.8%)	69 (16.8%)	29 (14.7%)
East Asian	36 (10.5%)	38 (9.3%)	20 (10.2%)
Brown/South Asian	58 (16.9%)	61 (14.9%)	27 (13.7%)
Arab/Middle Eastern	9 (2.6%)	6 (1.5%)	6 (3.0%)
Latin/Hispanic	6 (1.7%)	12 (2.9%)	6 (3.0%)
Indigenous	3 (0.9%)	3 (0.7%)	1 (0.5%)
Multiracial	46 (13.4%)	43 (10.5%)	26 (13.2%)
Did not report	2 (0.6%)	1 (0.2%)	2 (1.0%)
Gender identity			
Cisgender woman	159 (46.4%)	220 (53.7%)	94 (47.7%)
Transgender woman	2 (0.6%)	4 (1.0%)	2 (1.0%)
Cisgender man	164 (47.8%)	176 (42.9%)	98 (49.7%)
Transgender man	3 (0.9%)	2 (0.5%)	0 (0.0%)
Nonbinary	7 (2.0%)	1 (0.2%)	1 (0.5%)
Did not report	8 (2.3%)	7 (1.7%)	2 (1.0%)
Sexual orientation			
Straight	270 (78.7%)	333 (81.2%)	165 (83.8%)
Bisexual	29 (8.5%)	38 (9.3%)	14 (7.1%)
Gay/lesbian	12 (3.5%)	11 (2.7%)	7 (3.5%)
Queer	7 (2.0%)	1 (0.2%)	2 (1.0%)
Asexual	10 (2.9%)	17 (4.1%)	3 (1.5%)
Other	6 (1.7%)	3 (0.7%)	0 (0.0%)
Did not report	9 (2.6%)	7 (1.7%)	6 (3.0%)
Weight group			
"A little overweight"	202 (58.9%)	225 (54.9%)	125 (63.5%)
"Very overweight"	109 (31.8%)	114 (27.8%)	45 (22.8%)
"Obese"	32 (9.3%)	71 (17.3%)	27 (13.7%)
Socioeconomic status			
Lower class	20 (5.8%)	21 (5.1%)	10 (5.1%)
Working class	110 (32.1%)	128 (31.2%)	56 (28.4%)
Lower middle class	77 (22.4%)	100 (24.4%)	47 (23.9%)
Middle class	115 (33.5%)	141 (34.4%)	71 (36.0%)
Upper middle class	19 (5.5%)	19 (4.6%)	13 (6.6%)
Upper class	2 (0.6%)	0 (0.0%)	0 (0.0%)
Did not report	0 (0.0%)	1 (0.2%)	0 (0.0%)
BMI			
M (SD)	31.30 (6.74)	31.74 (7.01)	31.22 (6.01)
Range	21.43–88.07	19.63–71.55	18.72–54.86

Note. Some participants' self-reported height and weight corresponded with a BMI within the "average weight" range. Fisher's *r* to *z* correlational comparisons revealed that BMI and self-classified weight status were not differentially associated with the FMS and based on their self-classification as at least "a little overweight," these participants were included in analyses. BMI = body mass index; FMS = Fat Microaggressions Scale.

continue with the survey. The survey began with the 177-item FMS followed by the demographic questionnaire. Before the FMS, participants were instructed that the following questions asked them about their weight-related experiences and were informed that some questions may use the term "fat" in a neutral and not pejorative way. Participants were compensated £2.50 (United Kingdom) or C\$4.20 (Canada) consistent with Prolific's recommended rate of £9.00 per hour.

Measures

FMS. The initial version of the FMS contained 177 items mapped onto 13 dimensions: assumptions (15 items, e.g., "People assumed that I have poor hygiene"), concern trolling (eight items, e.g., "People have insisted they are 'only trying to help' after fat shaming me"), desirability (13 items, e.g., "People have acted surprised that I have a romantic partner"), devaluation (18 items, e.g., "Family members or friends act embarrassed by me"), diet and fitness (19 items, e.g., "People have made unsolicited comments on what I am eating"), employment (11 items, e.g., "My workplace implemented a 'wellness program' with a focus on weight loss"), environmental (10 items, e.g., "I am not able to comfortably fit through aisles"), fat talk (seven items, e.g., "I overheard someone say they 'feel' fat"), fashion (11 items, e.g., "Clothing in my size has fewer options than smaller sizes"), health/care (19 items, e.g., "Doctors blame unrelated physical problems on my weight"), humor (10 items, e.g., "People make fun of me because of my weight"), media (21 items, e.g., "I hear fat jokes in television shows or films"), and public property (15 items, e.g., "People squeeze or pinch my body"). Items were rated on a 5-point Likert-type scale from 1 (*never*) to 5 (*most days*), apart from some items in the fashion category (e.g., "When shopping, clothing that said 'one size fits all' has not fit me"), which were rated from 1 (*never*) to 5 (*usually*).

Demographic Questionnaire. Participants were asked to self-report their gender identity, sexual identity, country of residence, socioeconomic status, racial identity, ethnicity, age, and height and weight.

Study 2: Results

Preliminary Analyses

A missing data analysis indicated that 0.1% of the data were missing; thus, we did not replace missing values. Listwise deletion was used for the exploratory factor analyses. Analyses were conducted in SPSS Version 27.0.

EFA

We used EFA with principal axis factoring and direct oblimin rotation to examine the item loadings and factor structure of the FMS. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy, KMO = .932, and Bartlett's test of sphericity, $\chi^2(15576) = 50959.456$, $p < .001$, indicated that the data were suitable for analysis.

For the first EFA, we specified 13 factors to test the initial hypothesis (Hypothesis 1); however, the results did not support a coherent 13-factor structure, with every item loading onto the first factor and many cross-loading items above .30. An inspection of the scree plot suggested a four-factor structure, which we tested in a further EFA. These results indicated a more coherent and interpretable four-factor structure. A preliminary review of the content of the items comprising each factor suggested that the first factor reflected microaggressions experienced directly by respondents, the second factor reflected microaggressions experienced indirectly or vicariously, for example, through the media, the third factor reflected environmental or structural microaggressions, for example, related to public transport or availability of clothing, and the fourth factor reflected microaggressions in the form of unsolicited diet and exercise prescriptions. We determined the four-factor structure to be the best fit and used four factors moving forward.

Items were retained if they had a factor loading of at least .40 on a primary factor and did not cross-load onto another factor greater than .20, except for items pertaining to structural stigma (e.g., "I am not able to fit through turnstiles, on amusement park rides, or similar spaces"), which were deemed theoretically important and retained independent of cross-loadings. These two requirements led to the removal of 55 items, leaving 122 items. To further reduce the number of items, we examined the mean, communality, outlier correlations, and outlier anti-image off-diagonal correlations for each item. Items were considered for elimination if they had extremely low means, communality below .30, interitem correlations consistently below .30 or above .70, and anti-image off-diagonal correlations above .20, which would suggest item redundancy (Tabachnick & Fidell, 2007). In addition, the theoretical importance of each item was considered to ensure intersectional experiences were not erased. For example, the communality for the item "People act as if they are afraid of me" was below .30 but flagged as especially relevant for the fat Black community during the Delphi review process; therefore, this item was retained. A series of EFAs were run after applying these criteria, and we eliminated items one by one, ensuring that the four-factor structure was maintained. A further 82 items were removed through this process, resulting in 40 items that did not cross-load onto more than one factor.

Summary of the 40-Item FMS

The final FMS consisted of 40 items across four factors (see Appendix). The Kaiser–Meyer–Olkin measure of sampling adequacy (KMO = .955) and Bartlett's test of sphericity, $\chi^2(780) = 7922.10$, $p < .001$ were acceptable. Factor 1, Direct Experiences (37.74% of variance), included items that refer to direct experiences of public humiliation, exclusion, and invalidation from various sources and contexts, including health care providers, colleagues, partners, strangers, a generalized other, and the structural environment. Factor 2, Indirect Experiences (7.59% of variance), included items that refer to observed or indirect experiences of fat microaggressions through media and social encounters where individuals observe fat people and fatness being derogated and shamed. Factor 3, Clothing Exclusion (3.81% of variance), included items that refer to the everyday lack of access and availability of clothing to fit larger sized people. Factor 4, Benevolent Weightism (3.37% of variance), included items that refer to unsolicited weight-related commentary undergirded by fat stereotypes and prescriptions for weight loss, dieting, and exercise from friends, family, and others. See Table 3 for the factor loadings.

FMS Mean Scores, Internal Consistency, and Subscale Correlations

The mean scores, Cronbach's α, and subscale intercorrelations for the 40-item FMS and its subscales are presented in Table 4. Subscale mean scores ranged from 1.46 (0.58) to 2.83 (0.81) on a 5-point Likert-type scale. Individual item mean scores ranged from 1.22 ($SD = 0.56$; Item 1, "Medical staff make negative remarks, ridicule me, or call me names.") to 3.20 ($SD = 0.96$; Item 6, "I hear fat jokes in television shows or films"). Cronbach's α ranged from .89 to .96 for the 40-item FMS and its subscales, demonstrating excellent internal reliability (supporting Hypothesis 2).

Study 2: Discussion

The results indicated a coherent and reliable four-factor 40-item scale that did not reflect any of the 13 categories used in Study 1 (e.g., health care, romantic relationship) to group the microaggressions and instead indicated a framework for the categorization of fat microaggressions that distinguishes them by the way they are encountered—directly, indirectly, structurally, and benevolently. Indirect microaggressive experiences were endorsed more often than all other microaggressions, with the mean score for Indirect Experiences sitting just below the midpoint of the scale ("sometimes"). Overall, Study 2 provided initial support for the structural validity and reliability of the FMS.

Study 3: Confirmatory Factor Analysis

Study 3 had three stages. First, we tested whether the four-factor structure identified in the EFA would be confirmed in an independent sample of fat individuals. We hypothesized that the confirmatory factor analysis (CFA) would yield the same four-factor structure as observed in Study 2 (Hypothesis 1a) and demonstrate internal reliability (Hypothesis 1b). Second, we explored the construct validity of the FMS. We expected that the FMS would be positively related to measures of experienced weight stigma (Hypothesis 2a), internalized weight stigma (Hypothesis 2b), stress (Hypothesis 2c), and restriction of everyday activities (Hypothesis 2d), and negatively related to self-rated health (Hypothesis 2e), supporting convergent and concurrent criterion-related validity. We expected that the FMS would account for additional unique variance in restriction of everyday activities (Hypothesis 3a) and stress (Hypothesis 3b), above that explained by internalized weight stigma and another commonly used measure of experienced weight stigma, supporting incremental validity. We also expected significant differences in FMS scores across weight status groups, with "obese" participants reporting higher FMS scores than those who identify as "very overweight" and "a little overweight," and in turn, "very overweight" participants reporting higher FMS scores than those self-classifying as "a little overweight," supporting known groups validity (Hypothesis 4).

Third, given that the impact of microaggressions is understood to be cumulative and occurs through an accumulation of experiences and not a single instance, we expected experiences of fat microaggressions to be linked to more internalized weight bias as one consequence of that accumulation, and that internalized weight bias would explain, at least in part, the association between fat microaggressions and restricting one's social activities due to their weight. Therefore, we tested the direct effect of experiencing fat microaggressions on restricting one's everyday social activities because of one's weight (Hypothesis 5a) and the indirect effect through internalized weight bias (Hypothesis 5b), controlling self-reported health and body mass index (BMI).

Study 3: Method

Participants and Procedure

A total of 410 fat adults ($M_{age} = 37.07$, $SD = 12.41$) living in either Canada or the United Kingdom were recruited online via Prolific to participate in a study about their "weight-related experiences in everyday life," and a prescreening option was selected so the study would not be advertised to Prolific users who had participated in the previous study (Study 2). Further prescreening options were selected

Table 3

Item to Factor Loadings for the Four-Factor Fat Microaggressions Scale

| | Study 1 | | | | Study 2 | | | |
| | Exploratory | | | | Confirmatory | | | |
Item	F1	F2	F3	F4	F1	F2	F3	F4
1. Medical staff make negative remarks, ridicule me, or call me names.	**.74**	.12	.08	.04	**.66**			
5. Someone has posted something mean or embarrassing about my weight online.	**.72**	.03	.11	.03	**.64**			
9. People give me disgusted looks in a grocery store or restaurant.	**.66**	.02	.15	.06	**.84**			
17. I am not able to fit into seats at restaurants, theaters, or other public places.	**.60**	.07	.33	.09	**.64**			
34. I am excluded from social groups or activities because of my weight.	**.58**	.06	.17	.13	**.78**			
13. People stare or give me dirty looks in the gym.	**.55**	.13	.19	.02	**.77**			
25. People have acted surprised that I have a romantic partner.	**.53**	.06	.06	.22	**.75**			
21. People stared or laughed at me at the beach or pool.	**.52**	.08	.05	.18	**.75**			
28. I am not able to comfortably fit through aisles or turnstiles.	**.52**	.05	.21	.01	**.57**			
37. I have overheard other people making rude remarks about my weight in public.	**.47**	.20	.04	.25	**.81**			
31. People act as if they are afraid of me.	**.44**	.02	.12	.03	**.51**			
39. I see posters near elevators with images or slogans such as "be fit, not fat," shaming me for not taking the stairs.	**.44**	.17	.02	.13				**.54**
2. I see fat people exploited for entertainment.	.07	**.80**	.01	.01		**.70**		
10. I see fat characters being portrayed as a target of pity.	.01	**.76**	.03	.05		**.77**		
14. I see fat characters being portrayed as unlovable.	.12	**.76**	.03	.12		**.72**		
6. I hear fat jokes in television shows or films.	.01	**.72**	.06	.02		**.72**		
26. I see online comments fat shaming people.	.01	**.68**	.01	.10		**.75**		
18. I see people post comments on photos of fat people that they are "promoting obesity."	.04	**.67**	.03	.03		**.71**		
22. I see fat characters being portrayed as unintelligent.	.10	**.66**	.03	.07		**.69**		
29. I overheard someone say they "feel" fat.	.08	**.66**	.00	.08		**.59**		
32. People make fun of other fat people in front of me.	.21	**.58**	.14	.14		**.69**		
35. I see news headlines warning about the dangers of fatness.	.05	**.54**	.17	.03		**.49**		
38. I have heard someone make disparaging comments like "no one wants to see that" when a fat person is wearing revealing clothing.	.00	**.54**	.05	.15		**.73**		
40. My thin friend called themselves fat in front of me.	.08	**.49**	.01	.17		**.59**		
3. When shopping, clothing in my size has fewer options than smaller sizes.	.10	.17	**.74**	.12			**.85**	
7. Events that give all participants free t-shirts do not provide them in my size.	.16	.02	**.67**	.07			**.82**	
15. When shopping, stores that advertise "inclusive" sizing do not carry my size.	.22	.01	**.64**	.07			**.83**	
11. When shopping, clothing in my size is more expensive than smaller sizes.	.08	.06	**.64**	.06			**.82**	
19. When shopping, clothing that said "one size fits all" has not fit me.	.02	.19	**.63**	.02			**.84**	
23. I am not able to find clothes that fit.	.11	.02	**.60**	.13			**.79**	
4. People have told me I need to go on a diet.	.00	.07	.06	**.86**				**.84**
8. People have suggested that I exercise more to lose weight.	.13	.01	.19	**.76**				**.82**
16. People have told me I will get diabetes or other health issues if I do not lose weight.	.09	.08	.06	**.74**				**.78**
12. People insisted their "concern for my health" is not fat shaming.	.13	.08	.01	**.67**				**.81**
20. People give me unsolicited tips about weight loss.	.09	.09	.10	**.62**				**.83**
36. People who are not health professionals ask me about my blood sugar, cholesterol, and so forth	.33	.05	.06	**.54**				**.70**
33. People have made unsolicited comments on what I am eating.	.15	.19	.09	**.53**				**.81**
27. People have said "good for you!" after seeing me exercise.	.11	.21	.01	**.50**				**.73**
24. I have been told "all you really need is a little willpower."	.05	.19	.14	**.47**				**.78**
30. People have told me that I look much better after I have lost weight.	.11	.34	.04	**.41**				**.67**

Note. Pattern coefficient factor loadings > .4 are in bold type. F = factor; F1 = Direct Experiences; F2 = Indirect Experiences; F3 = Clothing Exclusion; F4 = Benevolent Weightism.

to ensure the sample would be comprised of individuals who self-identified as overweight, which included "slightly overweight," "overweight," or "very overweight" from among Prolific's self-classified weight prescreening options and balanced across women and men. Four identical surveys were uploaded to Prolific, with each study targeting a different racial group to ensure a racially diverse sample. See Table 2 for demographic information. The sample size approximated the common rule of thumb for a minimum case-to-parameter ratio of 5–10:1 (Bentler, 1990; Kline, 2010). Notably, structural equation modeling-based sample size requirements tend to decrease and then stabilize as the number of factors and indicators per

factor increase when factor loadings are within a moderate-to-large range (Wolf et al., 2013), preserving power in smaller samples.

Participants opened the link in Prolific to view the survey hosted on the Qualtrics platform. After providing consent, participants were asked to self-classify their weight, in case this no longer matched the information they had provided previously in Prolific. If the participant selected "underweight" or "average weight," they were thanked for their interest, and the survey ended. If they selected "a little overweight," "very overweight," or "obese," they were able to continue with the survey. Participants received the measures described below in a system-randomized order. This was followed

Table 4

Intercorrelations, Means, and Standard Deviations Among the FMS and Its Subscales in Study 2

Variable	1	2	3	4	5
1. FMS	—				
2. FMS-Direct	.83**	—			
3. FMS-Indirect	.83**	.51**	—		
4. FMS-Clothing	.78**	.65**	.49**	—	
5. FMS-Benevolent	.88**	.69**	.64**	.59**	—
α	.96	.91	.92	.89	.92
M	2.19	1.46	2.83	2.24	2.28
SD	0.66	0.58	0.81	1.04	0.87

Note. FMS = Fat Microaggressions Scale.
** Correlation is significant at the .01 level (two-tailed). Scores have a possible range of 1–5.

by the demographic questionnaire. Participants were compensated £2.50 (United Kingdom) or C\$4.20 (Canada).

Measures

FMS. As described above, the FMS contains 40 items with four subscales: Direct Experiences (11 items; e.g., "People give me disgusted looks in a grocery store or restaurant"), Indirect Experiences (12 items; e.g., "People make fun of other fat people in front of me"), Clothing Exclusion (six items; "When shopping, clothing in my size has fewer options than smaller sizes"), and Benevolent Weightism (11 items; e.g., "People give me unsolicited tips about weight loss"). Items were rated on a 5-point Likert-type scale from 1 (*never*) to 5 (*most days*), apart from items in the Clothing Exclusion subscale, which were rated from 1 (*never)* to 5 (*usually*). Scores are calculated by averaging responses for each subscale and the full scale. Higher scores indicate more frequent experiences of fat microaggressions. In this sample, Cronbach's α for the full scale was .96. Cronbach's αs for each of the subscales were also excellent, ranging from .91 to .94.

Stigmatizing Situations Inventory–Brief. The Stigmatizing Situations Inventory–Brief (SSI-B; Vartanian, 2015) is a shortened 10-item version of the 50-item SSI (Myers & Rosen, 1999) that assesses experiences of weight stigma. An example item is "Children loudly making comments about your weight to others." Items are scored from 0 (*once in your life*) to 9 (*daily*) and averaged, with higher scores indicating more frequent experiences of weight stigma. While some items represent microaggressive experiences, others represent more blatant forms of discrimination, for example, "Not being hired because of your weight, shape, or size." As such, the SSI-B is a more generalized measure of weight stigma experiences. Validated in several community samples of fat participants, the measure has shown very strong correlations with the original SSI, as well as positive associations with participants' BMI, eating pathology, and internalized weight bias, supporting its construct validity (Vartanian, 2015).

Weight Bias Internalization Scale–Modified. The Weight Bias Internalization Scale–Modified (WBIS-M; Pearl & Puhl, 2014) contains 11 items assessing internalized weight bias. The items (e.g., "I feel anxious about my weight because of what people might think of me") are rated on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses are averaged to create mean scores, with higher scores indicating more internalized weight bias. In a sample of U.S. adults, the WBIS-M has been found to positively

correlate with BMI, eating pathology, and feelings of depression and anxiety, supporting the measure's construct validity (Pearl & Puhl, 2014).

Perceived Stress Scale–4. The Perceived Stress Scale–4 (PSS-4; Cohen et al., 1983) is a four-item measure that assesses how much stress a person has experienced during the past month. An example item is "In the last month, how often have you felt that things were going your way?" Items are scored from 0 (*never*) to 4 (*very often*). Responses are averaged to create mean scores, with higher scores indicating greater perceived stress over the past month. In samples of European adults, the PSS-4 has demonstrated moderate-to-strong positive associations with depression and anxiety, and scores have been found to be lower in people who are young, employed, and earning a high income, supporting the scale's construct validity (Vallejo et al., 2018).

Restricted Activities Scale. The Restricted Activities Scale (REACT; B. E. Robinson & Bacon, 1989) measures the extent to which someone feels their weight prevents them from engaging in various activities. Each item asks, "How I feel about my weight, body shape, or size prevents me from …" followed by 37 different scenarios (e.g., "eating in front of others" or "wearing shorts and/or bathing suits"). All items were rated from 1 (*never*) to 5 (*always*). There was also an option to select *not applicable* (0). Total scores are calculated by averaging all responses, with higher scores indicating greater self-restriction of activities because of one's weight. The REACT scale has demonstrated good internal reliability in samples of fat adults (B. E. Robinson & Bacon, 1996).

Self-Rated Health. To assess self-rated health, participants responded to a single item about their health ("In general, would you say your health is … ?") using the following 5-point scale: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, and 5 = *excellent* (Idler & Benyamini, 1997). This measure was previously used in a large U.S. study that found experiences of everyday weight discrimination predicted worse self-rated health after controlling for BMI and demographic factors (Sutin & Terracciano, 2017). Single-item measures of self-rated health are widely used in health surveys and moderately to strongly correlate with physicians' assessments of patients' health, as well as predicting mortality and other future health outcomes (Benyamini, 2016).

Demographic Questionnaire. Participants were asked to self-report their gender identity, sexual identity, country of residence, socioeconomic status, racial identity, ethnicity, age, and height and weight.

Study 3: Results

Preliminary Analyses

A missing data analysis indicated that the amount of missing data was very low, thus we did not replace missing values: FMS (0.28%), SSI-B (0.07%), WBIS-M (0.09%), and PSS-4 (0.12%). Listwise deletion was used for the analyses, except for the correlation analysis, which used pairwise deletion. Little's Missing Completely At Random test supported the assumption that the data on the FMS, $\chi^2(393) = 378.81, p = .69$, SSI-B, $\chi^2(27) = 22.08, p = .73$, and WBIS-M, $\chi^2(29) = 15.29, p = .98$, were missing completely at random. Little's Missing Completely At Random test for the PSS-4 did not indicate that the data were missing completely at random, $\chi^2(6) = 18.44, p < .01$, but this result may have been due to the measure

containing only four items, two of which were each missing one response. Participants were able to skip questions that were not relevant to them on the REACT measure, so missing data analysis was not run for this scale. Across all study measures, levels of skewness and kurtosis were well within the acceptable range (skewness <2, kurtosis <7; Fabrigar et al., 1999).

Confirming the FMS's Factor Structure

A CFA using maximum likelihood estimation was run in R with the lavaan package (Rosseel, 2012) on the 40-item FMS scale. We followed Hu and Bentler (1999) guidelines for determining the adequacy of the model fit via consensus among the comparative fit index (CFI), root-mean-square error of approximation (RMSEA), and standardized root-mean-square residual (SRMR). In support of Hypothesis 1a, the findings from the CFA indicated that the overall model was a good fit to the data: CFI = .92, RMSEA = .052 (90% CI [.048, .055]), SRMR = .051, $\chi^2(734) = 1508.07$, $p < .000$. In a careful review of the final set of items, it was determined that the item, "I see posters near elevators with images or slogans such as 'be fit, not fat,' shaming me for not taking the stairs," did not fit conceptually onto the Direct Experiences factor where it originally loaded. When this item was added to the Benevolent Weightism factor, where it was a better conceptual fit, the model fit remained good, CFI = .92, RMSEA = .052 (90% CI [0.048, 0.056]), SRMR = .058, $\chi^2(734) = 1516.67$, $p < .001$. Because the fit indices were comparable and the item theoretically made more sense on this factor, it was moved to the Benevolent Weightism subscale. See Table 3 for the factor loadings.

FMS Mean Scores and Internal Consistency

The mean score on the 40-item FMS was 2.50 ($SD = 0.71$) on a 5-point Likert-type scale. Mean subscale scores ranged from 1.64 ($SD = 0.71$) to 3.19 ($SD = 0.75$). Individual item mean scores ranged from 1.35 ($SD = .74$; Item 5: "Someone has posted something mean or embarrassing about my weight online") to 3.56 ($SD = 0.91$; Item

35: "I see news headlines warning about the dangers of fatness"). The total FMS score distribution was normal (skewness = 0.37 and excess kurtosis = −0.63). Cronbach's α was .96 for the 40-item FMS, supporting Hypothesis 1b, and the subscales also demonstrated excellent reliability, ranging from .91 to .94.

Tests of Construct Validity

Bivariate correlations between the FMS and the other study variables were examined to estimate the scale's construct validity (see Table 5). The FMS was strongly correlated with experienced weight stigma (measured by the SSI-B, $r = .79$), supporting Hypothesis 2a and providing evidence of convergent validity. As expected, the correlation between the FMS and SSI-B was high, as they both measure experienced weight stigma, but not so high as to indicate redundancy. Additionally, scale means suggest that frequency ratings were, on average, slightly higher for the FMS than the SSI-B. The FMS was positively correlated with internalized weight stigma (measured by the WBIS-M), perceived stress (measured by the PSS-4), and restriction of activities (measured by REACT), supporting Hypotheses 2b–2d, respectively, and the scale's concurrent criterion-related validity.

In a series of regression analyses to estimate the incremental validity of the FMS, we regressed restriction of activities (REACT) and perceived stress (PSS-4) on demographic factors (i.e., weight group, race, gender, age, socioeconomic status [SES]), internalized weight stigma (WBIS-M), weight-stigmatizing experiences (SSI-B), and the FMS (see Table 6). Inclusion of the SSI-B was designed to provide the most stringent test of the incremental validity of the FMS. In each model, demographic factors were entered at Step 1, internalized weight stigma and weight-stigmatizing experiences were entered at Step 2, and the FMS was entered at Step 3.

In the model for restriction of activities, the full model accounted for 72.1% of the variance in restriction of activities, $F(8, 394) = 130.92$, $p < .001$. At Step 1, weight group, gender, age, and SES were significant predictors of restriction of activities ($p < .01$). At Step 2,

Table 5
Intercorrelations, Means, and Standard Deviations Among Study 3 Variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. FMS	—										
2. FMS-Direct	.86**	—									
3. FMS-Indirect	.82**	.57**	—								
4. FMS-Clothing	.79**	.66**	.48**	—							
5. FMS-Benevolent	.90**	.71**	.65**	.63**	—						
6. SSI-B	.79**	.82**	.56**	.59**	.72**	—					
7. WBIS-M	.60**	.53**	.52**	.52**	.50**	.48**	—				
8. PSS-4	.45**	.38**	.42**	.26**	.43**	.39**	.57**	—			
9. REACT	.72**	.64**	.61**	.59**	.62**	.65**	.78**	.53**	—		
10. Health	−.22**	−.23**	−.15**	−.20**	−.18**	−.23**	−.36**	−.34**	−.30**	—	
11. BMI	.52**	.53**	.33**	.63**	.35**	.39**	.41**	.12*	.39**	−.15**	—
α	.96	.92	.91	.93	.94	.91	.94	.81	.98		
M	2.50	1.64	3.19	2.60	2.56	1.34	4.41	1.94	2.62	2.53	31.74
SD	0.67	0.71	0.75	1.15	0.93	1.39	1.44	0.83	0.99	0.83	7.01
Min.	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	19.63
Max.	4.25	4.36	4.83	5.00	5.00	8.90	7.00	4.00	4.97	5.00	71.55
Possible range	1–5	1–5	1–5	1–5	1–5	0–9	1–7	0–4	1–5	1–5	

Note. FMS = Fat Microaggressions Scale. SSI-B = Stigmatizing Situations Inventory–Brief. WBIS-M = Weight Bias Internalization Scale–Modified. PSS-4 = Perceived Stress Scale–4. REACT = Restriction of Activities Scale: BMI = body mass index; Min. = minimum; Max. = maximum.
* Correlation is significant at the .05 level (two-tailed).   ** Correlation is significant at the .01 level (two-tailed).

Table 6
Test of Incremental Validity From Study 3

Predictor	β	t	adj R^2	ΔR^2	ΔF	sr^2
			Criterion: REACT			
Step 1			.23	.23	24.29***	
Weight group	.33	7.17***				.032
Race	−.03	−0.71				.001
Gender	−.12	−2.68**				.002
Age	−.25	−5.41***				.057
SES	−.15	−3.26**				.020
Step 2			.70	.47	317.49***	
Weight group	−.01	−0.15				.000
Race	−.02	−0.53				.000
Gender	−.02	−0.64				.000
Age	−.03	−1.14				.001
SES	.02	0.64				.000
WBIS-M	.60	17.26***				.222
SSI-B	.36	11.16***				.092
Step 3			.72	.02	29.38***	
Weight group	−.05	−1.48				.002
Race	−.02	−0.57				.000
Gender	.00	0.16				.000
Age	−.03	−0.93				.001
SES	.01	0.50				.000
WBIS-M	.54	15.42***				.164
SSI-B	.19	4.28***				.012
FMS	.27	5.41***				.020
			Criterion: PSS-4			
Step 1			.18	.19	18.16***	
Weight group	.10	2.04*				.008
Race	−.02	−0.34				.000
Gender	−.02	−0.33				.000
Age	−.31	−6.53***				.088
SES	−.25	−5.44***				.061
Step 2			.40	.23	75.35***	
Weight group	−.13	−2.93**				.013
Race	.00	0.01				.000
Gender	.07	1.66				.004
Age	−.16	−3.74***				.021
SES	−.14	−3.46***				.018
WBIS-M	.50	10.03***				.151
SSI-B	.14	3.12**				.015
Step 3			.41	.01	6.72**	
Weight group	−.16	−3.50***				.018
Race	.00	0.00				.000
Gender	.08	2.04*				.006
Age	−.15	3.64***				.020
SES	−.14	−3.56***				.019
WBIS-M	.46	8.86***				.116
SSI-B	.02	0.37				.000
FMS	.19	2.59*				.010

Note. REACT = Restricted Activities Scale; SES = socioeconomic status; WBIS-M = Weight Bias Internalization Scale–Modified; SSI-B = Stigmatizing Situations Inventory–Brief; FMS = Fat Microaggressions Scale; PSS-4 = Perceived Stress Scale–4.
* $p < .05$. ** $p < .01$. *** $p < .001$.

the WBIS-M and SSI-B were significant predictors of restriction of activities ($p < .001$). At Step 3, the WBIS-M and SSI-B remained significant, and the FMS was a significant predictor of restriction of activities ($p < .001$). Semipartial correlations showed that the FMS accounted for 2.0% of unique variance in the restriction of activities, providing support for Hypothesis 3a.

In the model for stress, the full model accounted for 41.0% of the variance in stress, $F(8, 392) = 35.80, p < .001$. At Step 1, weight group, age, and SES were significant predictors of stress ($p < .05$). At Step 2, weight group, age, and SES remained significant predictors ($p < .05$), and the WBIS-M and SSI-B were significant predictors of stress ($p < .01$). At Step 3, weight group, gender, age, SES, were significant demographic predictors ($p < .05$). The WBIS-M remained a significant predictor ($p < .001$), but the SSI-B was no longer significant. The FMS was a significant predictor of stress ($p < .05$). Semipartial correlations showed that the FMS accounted for 1.0% of the unique variance in stress, providing support for Hypothesis 3b.

A one-way analysis of variance was used to compare the mean FMS total and subscale scores across the three weight status groups. Welch's F is reported as it does not assume equal variances. The results for this analysis are presented in Table 7. We observed a significant difference between the three groups for the overall FMS mean score, $F(2, 171.53) = 58.09, p < .001$. A priori planned comparisons indicated higher total FMS scores for the "obese" group compared with the "very overweight" and "a little overweight" groups ($p < .001$), and higher total FMS scores for the "very overweight" group compared with the "a little overweight" group ($p < .001$). We also observed significant differences between the three weight status groups on each of the FMS mean subscale scores with one exception. A priori planned comparisons indicated higher subscale FMS scores for the "obese" group compared with the "very overweight" group ($p < .01$) on the Direct Experiences, Indirect Experiences, and Clothing Exclusion subscales. There was no difference between the "obese" and "very overweight" groups on the Benevolent Weightism subscale. A priori planned comparisons indicated higher subscale FMS scores for the "obese" group compared with the "a little overweight" ($p < .001$) group, and higher subscale FMS scores for the "very overweight" group compared with the "a little overweight" group ($p < .001$), across all four subscales. Overall, these findings support Hypothesis 4 and indicate known groups validity for the scale.

Tests of Direct and Indirect Effects of Fat Microaggressions

We examined whether everyday experiences of fat microaggressions directly predicted restriction of everyday activities in the lives of fat individuals and via internalized weight stigma. We used the PROCESS macro (Model 4, Version 4.1, SPSS 28.0; Hayes, 2022) to test the direct and indirect effects of fat microaggressions (X) on restricting activities (Y) through internalized weight stigma (M), controlling for self-rated health and BMI. We tested each fat microaggressions subscale in a separate model, resulting in four models examined. We set the number of bootstrapping samples at 5,000 iterations. Bias-corrected 95% confidence intervals (CIs) were generated for each model to test whether an indirect effect would be observed (Shrout & Bolger, 2002). If the 95% CI limits included zero, the indirect effect was not significant. Both unstandardized and standardized path coefficients and indirect effects are reported in Figures 1–4.

Significant direct and indirect effects (via internalized weight stigma) on restriction of activities were observed for all four subscales of fat microaggressions. Collectively, these findings support Hypotheses 5a–5d. These results were observed when controlling for the effect of self-rated health and self-reported BMI on people's restriction of everyday activities. Notably, the covariates, BMI and self-rated health, while moderately correlated with restriction of activities, were not significant predictors of restricting activities when internalized weight stigma was

Table 7

Test of Known Groups Validity From Study 3

Measure	"A little overweight" M (SD)	"Very overweight" M (SD)	"Obese" M (SD)	Welch's F	η^2
Full FMS	2.22$_a$ (0.61)	2.68$_b$ (0.66)	3.08$_c$ (0.63)	58.09***	.22
Direct	1.41$_a$ (0.50)	1.76$_b$ (0.71)	2.20$_c$ (0.72)	41.70***	.19
Indirect	3.01$_a$ (0.71)	3.28$_b$ (0.73)	3.60$_c$ (0.70)	21.50***	.09
Clothing	2.06$_a$ (0.92)	2.95$_b$ (1.01)	3.76$_c$ (0.92)	101.97***	.33
Benevolent	2.28$_a$ (0.89)	2.81$_b$ (0.86)	3.05$_b$ (0.84)	28.18***	.11

Note. Means in the same row that do not share subscript alphabets are significantly different at the $p < .05$ level. The FMS and all subscales are scored 1–5. FMS = Fat Microaggressions Scale.
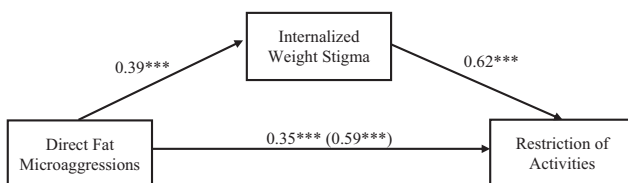*** $p < .001$.

included in the models.[4] Covariates are omitted from the figures for parsimony.

Study 3: Discussion

The four-factor structure of the FMS was confirmed in an independent sample of fat adults. We also observed positive associations between the FMS and internalized weight stigma, stress, and restriction of activities, and a negative association with self-rated health. Participants who self-classified in the highest weight category reported significantly more encounters of fat microaggressions compared with the other weight status groups. Finally, each of the four FMS subscales predicted the restriction of activities, both directly and through the effect of experienced microaggressions on internalized weight stigma. These findings suggest that fat microaggressions may cause fat people to withdraw from everyday activities and miss important opportunities related to work, relationships, and well-being. Overall, this study provides evidence for the psychometric properties and construct validity of the FMS and suggests that fat microaggressions are influential in shaping the everyday social behaviors of fat individuals.

Figure 1

Standardized Path Coefficients for Direct Experiences to REACT

Note. Total effect is in parentheses; completely standardized indirect effect: $b = 0.24$, $SE = 0.03$, 95% CI [0.18, 0.30]. Model explained 69.1% of variance in restriction of activities. Unstandardized coefficients as follows. Total effect: $b = 0.88$, $SE = 0.07$, $p < .001$, 95% CI [0.75, 1.01]; direct effect: $b = 0.52$, $SE = 0.06$, $p < .001$, 95% CI [0.41, 0.63]; and indirect effect: $b = 0.36$, $SE = 0.05$, 95% CI [0.27, 0.46]. Fat microaggressions and restriction of activities scored from 1 to 5 and internalized weight stigma from 1 to 7. CI = confidence interval; SE = standard error; REACT = Restricted Activities Scale.
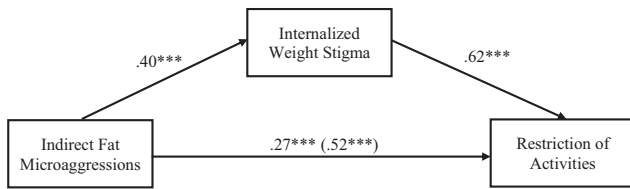*** $p < .001$.

Study 4: Test–Retest Reliability and Further Tests of Construct Validity

The main aims of Study 4 were to assess the test–retest reliability of the FMS and further examine its construct validity. Specifically, we examined the associations between FMS scores at baseline (Time 1) and 4 weeks later (Time 2) to estimate the stability of the measure over time. We explored the concurrent criterion-related validity for the FMS by testing the associations between the FMS scores at Time 2 and several measures of mental well-being, and a more nuanced measure of internalized weight stigma than that used in the previous study, specifically a two-factor measure that distinguishes between weight-related self-devaluation and more general weight-related distress. The inclusion of the Two-Factor Weight Bias Internalization Scale (WBIS-2F) addresses limitations of the widely used WBIS-M by challenging assumptions of unidimensionality and provides a more stringent test of the FMS by accounting for the distinct and cumulative roles of the distress and devaluation in predicting mental health outcomes. We estimated the predictive criterion-related validity for the FMS by testing whether FMS scores at Time 1 would predict depression, anxiety, stress, and trauma symptoms at Time 2. We also examined whether the FMS accounted for unique variance in depression, anxiety, stress, and trauma symptoms above that explained by weight-related distress and weight-related self-devaluation, supporting incremental validity. Finally, we tested the direct and indirect effects of each of the four subscales of fat microaggressions, measured at Time 1, on trauma symptoms due to discrimination through internalized weight stigma, both measured at Time 2.

Given that microaggressions are experienced on a day-to-day basis, we expected the FMS scores would remain stable over a 4-week time window, providing evidence for test–retest reliability (Hypothesis 1). We expected the four categories of the FMS would be positively correlated with weight-related distress and self-devaluation, depression, anxiety, stress, trauma symptoms of discrimination, and negative affect (Hypothesis 2a) and negatively correlated with self-esteem and positive affect (Hypothesis 2b), supporting concurrent criterion-related validity. We hypothesized that the FMS at Time 1 would positively predict

---

[4] BMI was also not a significant predictor of restriction of activities in total effects models for the Direct and Clothing subscales (i.e., with FMS subscales and all covariates, but not internalized weight stigma, included as predictors), $ps = .209$ and .601, respectively. However, BMI remained a significant independent predictor of restriction of activities when controlling for Indirect and Benevolent Weightism, both $p < .001$.
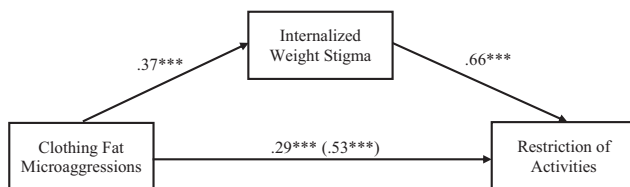
Figure 2
Standardized Path Coefficients for Indirect Experiences to REACT

Note. Total effect is in parentheses; completely standardized indirect effect: $b = 0.25$, $SE = 0.03$, 95% CI [0.19, 0.31]. Model explained 67.2% of variance in restriction of activities. Unstandardized coefficients as follows. Total effect: $b = 0.69$, $SE = 0.05$, $p < .001$, 95% CI [0.58, 0.80]; direct effect: $b = 0.36$, $SE = 0.05$, $p < .001$, 95% CI [0.27, 0.45]; and indirect effect: $b = 0.33$, $SE = 0.04$, 95% CI [0.25, 0.41]. Fat microaggressions and restriction of activities scored from 1 to 5 and internalized weight stigma from 1 to 7. CI = confidence interval; SE = standard error; REACT = Restricted Activities Scale.
*** $p < .001$.

internalized weight stigma, depression, anxiety, stress, and trauma at Time 2, supporting predictive criterion-related validity (Hypothesis 3), and that the FMS at Time 2 would account for unique variance in depression, anxiety, stress, and trauma symptoms due to discrimination (Hypothesis 4a–4d, respectively), beyond any contribution of weight-related distress or weight-related self-devaluation, supporting incremental validity. Finally, we examined a short-term causal linking of experiences of fat microaggressions to internalized weight stigma and trauma symptoms. We expected that FMS scores would directly predict trauma symptoms due to discrimination 1 month later (Hypothesis 5a) and indirectly via weight-related distress and weight-related self-devaluation 1 month later (Hypothesis 5b), controlling for BMI, self-esteem, and depression, supporting a mediation model linking fat microaggressions and internalized weight stigma to trauma in fat individuals.

Figure 3
Standardized Path Coefficients for Clothing Exclusion to REACT

Note. Total effect is in parentheses; completely standardized indirect effect: $b = 0.25$, $SE = 0.04$, 95% CI [0.18, 0.32]. Model explained 66.5% of variance in restriction of activities. Unstandardized coefficients as follows. Total effect: $b = 0.46$, $SE = 0.05$, $p < .001$, 95% CI [0.37, 0.55]; direct effect: $b = 0.25$, $SE = 0.04$, $p < .001$, 95% CI [0.18, 0.32]; and indirect effect: $b = 0.22$, $SE = 0.03$, 95% CI [0.15, 0.28]. Fat microaggressions and restriction of activities scored from 1 to 5 and internalized weight stigma from 1 to 7. CI = confidence interval; SE = standard error; REACT = Restricted Activities Scale.
*** $p < .001$.

Study 4: Method

Participants and Procedure

Participants ($N = 197$, $M_{age} = 40.54$, $SD = 12.90$) were recruited from the pool of participants in Study 3 through Prolific (see Table 2, for demographic information) approximately 4 weeks after Study 3 was completed. This sample size exceeds the estimated required sample size ($n = 116$) for bias-corrected bootstrap tests of mediated effects with .80 statistical power and a moderately sized α path and small-to-moderate-sized β path (Fritz & Mackinnon, 2007). Participants opened the link in Prolific to view the survey hosted on the Qualtrics platform. Once they consented, participants were asked to self-classify their weight again in case their weight no longer matched the information they had provided previously in Prolific. If the participant selected "underweight" or "average weight," they were thanked for their interest, and the survey ended. If they selected "a little overweight," "very overweight," or "obese," they were able to continue with the survey.[5] Participants completed the 40-item FMS and the measures below in a system-randomized order, followed by a demographics questionnaire. Participants were compensated with £1.88 (United Kingdom) or C$3.09 (Canada).

Measures

FMS. Participants completed the 40-item FMS. In this sample, Cronbach's α for the full scale was .97 and for the subscales ranged from .92 to .94.

WBIS-2F. The WBIS-2F (Meadows & Higgs, 2019) is a measure of internalized weight bias with two subscales: self-devaluation and weight-related distress. The WBIS-2F distinguishes and captures both global self-defect—arguably the core operationalization of the construct—and the negative impact of living in a fat body in a fatphobic society, independent of whether one devalues oneself. A sample item for the self-devaluation factor is: "As an overweight person, I feel that I am just as deserving of respect as anyone." A sample item for the distress factor is: "I feel anxious about being overweight because of what people might think of me." Items are ranked from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores are calculated by averaging all responses, with higher scores indicating greater weight self-stigma. The WBIS-2F has been validated in a large sample of fat adults, confirming its two-factor structure (Meadows & Higgs, 2019).

Depression Anxiety Stress Scale–21. The Depression Anxiety Stress Scale–21 (Lovibond & Lovibond, 1995) is a 21-item measure that assesses three dimensions of distress: depression (e.g., "I found it difficult to work up the initiative to do things"), anxiety (e.g., "I felt scared without any good reason"), and stress (e.g., "I found it difficult to relax"). Items are rated from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Total scores are calculated by summing responses for each subscale and multiplying by two, with higher scores indicating more severe levels of depression, anxiety, and stress, respectively. The three-factor structure has been confirmed in nonclinical adult samples (Henry & Crawford, 2005; Sinclair et al., 2012), and all Depression Anxiety Stress Scale–21 subscales negatively correlate with self-esteem and a general measure

---

[5] Out of the 197 returning participants, 38 had changed their self-classified weight after the 4-week period. However, their self-classified weight still met the inclusion criteria, thus they were included in analyses.

Figure 4
Standardized Path Coefficients for Benevolent Weightism to REACT
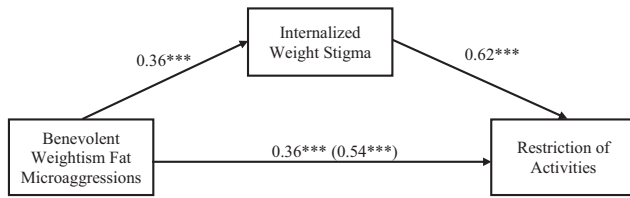
Note. Total effect is in parentheses; completely standardized indirect effect: $b = 0.22$, $SE = 0.03$, 95% CI [0.17, 0.28]. Model explained 69.1% of variance in restriction of activities. Unstandardized coefficients as follows. Total effect: $b = 0.58$, $SE = 0.04$, $p < .001$, 95% CI [0.49, 0.67]; direct effect: $b = 0.34$, $SE = 0.03$, $p < .001$, 95% CI [0.27, 0.41]; and indirect effect: $b = 0.24$, $SE = 0.03$, 95% CI [0.18, 0.30]. Fat microaggressions and restriction of activities scored from 1 to 5 and internalized weight stigma from 1 to 7. CI = confidence interval; SE = standard error; REACT = Restricted Activities Scale.
*** $p < .001$.

of physical and mental health well-being (Sinclair et al., 2012), supporting its construct validity.

Trauma Symptoms of Discrimination Scale. The Trauma Symptoms of Discrimination Scale (M. T. Williams et al., 2018) is a 21-item measure that assesses anxiety-related trauma symptoms due to experiences of discrimination. Items (e.g., "Due to past experiences of discrimination, I often feel nervous, anxious, or on edge, especially around certain people") are rated from 1 (*never*) to 4 (*often*), and a total score is calculated by summing all responses. The Trauma Symptoms of Discrimination Scale has shown excellent internal consistency and test–retest validity in a sample of African American undergraduates (M. T. Williams et al., 2018). It also positively correlates with other measures of discrimination, depression, and social anxiety, supporting its construct validity (M. T. Williams et al., 2018).

Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale (Rosenberg, 1965) is a 10-item scale that measures global self-worth. Items (e.g., "I feel that I'm a person of worth, at least on an equal plane with others") are scored from 1 (*strongly disagree*) to 4 (*strongly agree*). Total scores were obtained by calculating the average of all responses, with higher scores indicating greater self-esteem. The Rosenberg Self-Esteem Scale has demonstrated good test–retest reliability (Torrey et al., 2000) and negative associations with depression, anxiety, and stress in a sample of U.S. adults (Sinclair et al., 2010), supporting its construct validity.

Positive and Negative Affect Scale. The Positive and Negative Affect Schedule (Watson et al., 1988) is a 20-item measure that assesses both positive and negative affect with two 10-item subscales. Participants are presented with a list of 20 words that describe positive emotions (e.g., "excited," "proud") and negative emotions (e.g., "irritable," "ashamed") and are asked to what extent they generally feel that way, from 1 (*very slightly or not at all*) to 5 (*extremely*). Total scores are created by summing across the responses for each type of affect. In a sample of U.K. adults, the Positive and Negative Affect Schedule has demonstrated good reliability and correlates with measures of depression, anxiety, and stress, supporting construct validity (J. R. Crawford & Henry, 2004).

Demographic Questionnaire. Participants were again asked to self-report their gender identity, sexual identity, country of residence,

socioeconomic status, racial identity, ethnicity, age, and height and weight.

Study 4: Results

Preliminary Analyses

Missing data for all measures were low (all 0%–0.15%); therefore, we did not impute any missing values. Listwise deletion was again used for the analyses, except for the correlations, which used pairwise deletion. Little's Missing Completely At Random test indicated data were missing at random for all measures (ps ranged from .33 to .87). Each measure demonstrated levels of skewness and kurtosis within the acceptable range (all skewness values <2, all kurtosis values <2). See Table 8 for a summary of the descriptive statistics for the study variables.

The mean scores for the 40-item FMS and its subscales are presented in Table 8. Mean subscale scores ranged from 1.64 (0.68) to 3.09 (0.72). Individual item mean scores ranged from 1.36 ($SD = .72$; Item 5: "Someone has posted something mean or embarrassing about my weight online") to 3.53 ($SD = .87$; Item 35: "I see news headlines warning about the dangers of fatness"). The total FMS score distribution was normal (skewness = 0.46 and excess kurtosis = −0.26). Cronbach's α was .97 for the 40-item FMS, again demonstrating excellent internal reliability. The subscales also demonstrated good to excellent reliability, ranging from .92 to .94. An independent sample t test indicated that those who participated in Study 4 were older ($M = 40.29$, $SD = 12.85$) than those who only participated in Study 3 ($M = 34.13$, $SD = 11.24$), $t(406) = −5.17$, $p < .001$. Chi-square tests indicated that there were no differences among those who only participated in Study 3 and those who returned for Study 4, with respect to gender, race, weight classification, and socioeconomic status (ps ranged from .07 to .16).

Test–Retest Reliability

We examined the intraclass correlation coefficient (ICC) between the Time 1 FMS total and subscale scores and the Time 2 FMS scores 4 weeks later. The ICC estimates and 95% CIs were calculated using a two-way mixed-effect model to allow for non-random variance across tests and absolute agreement between single scores (Qin et al., 2019). The ICC for overall FMS scores was .857, 95% CI [.815, .890], $p < .001$, indicating good test–retest reliability. Each of the FMS subscale scores at Times 1 and 2 also demonstrated good test–retest reliability: Direct Experiences (ICC = .813, 95% CI [.760, .856]), Indirect Experiences (ICC = .775, 95% CI [.713, .826]), Clothing Exclusion (ICC = .816, 95% CI [.763, .859]), and Benevolent Weightism (ICC = .844, 95% CI [.799, .880]), all ps < .001. Thus, the 4-week test–retest reliability of the FMS and its subscales was supported (Hypothesis 1).

Tests of Construct Validity

Bivariate correlations between the FMS scores and the study variables were examined for further evidence of the scale's construct validity (see Table 8). The four categories of the FMS assessed concurrently with the other study variables (at Time 2) were positively correlated with weight-related distress, weight-related self-devaluation, depression, anxiety, stress, trauma symptoms due to discrimination, and negative affect (consistent with Hypothesis 2a) and negatively correlated with self-esteem and positive affect

Table 8

Intercorrelations, Means, and Standard Deviations Among Study 4 Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. T1 FMS	—																				
2. T1 FMS-Direct	.87**	—																			
3. T1 FMS-Indirect	.79**	.54**	—																		
4. T1 FMS-Clothing	.79**	.68**	.42**	—																	
5. T1 FMS-Benevolent	.92**	.75**	.64**	.64**	—																
6. T2 FMS	.86**	.77**	.67**	.67**	.79**	—															
7. T2 FMS-Direct	.74**	.82**	.48**	.60**	.64**	.87**	—														
8. T2 FMS-Indirect	.67**	.51**	.78**	.38**	.56**	.81**	.59**	—													
9. T2 FMS-Clothing	.70**	.62**	.43**	.82**	.58**	.81**	.67**	.49**	—												
10. T2 FMS-Benevolent	.79**	.69**	.56**	.55**	.84**	.90**	.74**	.63**	.65**	—											
11. WBIS–2F	.45**	.44**	.38**	.37**	.37**	.50**	.48**	.36**	.41**	.44**	—										
12. WBIS-Distress	.43**	.38**	.40**	.35**	.36**	.48**	.42**	.38**	.40**	.43**	.93**	—									
13. WBIS-Self-Devaluation	.37**	.41**	.25**	.31**	.30**	.39**	.45**	.24**	.32**	.34**	.85**	.60**	—								
14. Depression	.31**	.35**	.26**	.21**	.25**	.41**	.42**	.33**	.33**	.32**	.56**	.54**	.45**	—							
15. Anxiety	.44**	.48**	.33**	.28**	.41**	.56**	.55**	.44**	.42**	.49**	.49**	.43**	.44**	.74**	—						
16. Stress	.41**	.41**	.37**	.21**	.36**	.49**	.50**	.42**	.31**	.43**	.53**	.50**	.44**	.82**	.80**	—					
17. TSDS	.57**	.53**	.50**	.35**	.53**	.64**	.61**	.53**	.44**	.58**	.56**	.56**	.42**	.70**	.71**	.71**	—				
18. Self-esteem	-.35**	-.37**	-.33**	-.27**	-.26**	-.38**	-.38**	-.29**	-.33**	-.31**	-.77**	-.74**	-.62**	-.76**	-.57**	-.65**	-.65**	—			
19. Positive affect	-.14*	-.15*	-.15*	-.17*	-.07	-.17*	-.18*	-.11	-.21**	-.10	-.48**	-.47**	-.37**	-.59**	-.30**	-.40**	-.32**	.64**	—		
20. Negative affect	.35**	.36**	.32**	.17*	.31**	.47**	.46**	.41**	.31**	.40**	.50**	.44**	.46**	.76**	.78**	.83**	.66**	-.62**	-.42**	—	
21. BMI	.49**	.48**	.30**	.59**	.34**	.43**	.37**	.25**	.57**	.33**	.37**	.39**	.25**	.24**	.28**	.25**	.29**	-.33**	-.21**	.21**	—
α	.96	.92	.91	.93	.94	.97	.93	.92	.94	.94	.87	.83	.77	.94	.87	.90	.98	.94	.93	.93	
M	2.40	1.59	3.05	2.52	2.47	2.45	1.64	3.09	2.56	2.51	3.33	4.18	2.34	12.26	7.51	12.08	46.07	2.73	27.03	20.56	31.22
SD	0.71	0.65	0.76	1.13	0.93	0.70	0.68	0.72	1.16	0.90	1.06	1.30	1.05	11.55	8.35	9.89	17.73	0.70	8.90	9.04	6.01
Possible range	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–7	1–7	1–7	0–42	0–42	0–42	1–84	1–4	10–50	10–50	10–50

Note. T2 occurred approximately 4 weeks after T1. FMS = Fat Microaggressions Scale; WBIS-2F = Two-Factor Weight Bias Internalization Scale; TSDS = Trauma Symptoms From Discrimination Scale; T1 = Time 1; T2 = Time 2; BMI = body mass index.

* Correlation is significant at the .05 level (two-tailed).   ** Correlation is significant at the .01 level (two-tailed).

(consistent with Hypothesis 2b), supporting concurrent criterion-related validity for the scale. The four categories of the FMS at Time 1 assessed prior to the other study variables positively predicted weight-related distress, weight-related self-devaluation, depression, anxiety, stress, and trauma symptoms assessed 4 weeks later, supporting predictive criterion-related validity for the scale (Hypothesis 3).

In a series of regression analyses to estimate the incremental validity of the FMS, we regressed depression, anxiety, stress, and trauma symptoms on the two factors of internalized weight stigma and the FMS at Time 2 (see Table 9). In each model, weight-related distress and weight-related self-devaluation were entered at Step 1, and the FMS was entered at Step 2.

In the model for depression, the full model accounted for 32.5% of the variance, $F(3, 193) = 32.49$, $p < .001$. At Step 1, weight-related distress and weight-related self-devaluation were significant predictors of depression ($p < .01$). At Step 2, weight-related distress and weight-related self-devaluation remained significant ($p < .05$), and the FMS was a significant predictor ($p < .05$). Semipartial correlation showed that the FMS accounted for 2.2% unique variance in depression scores, providing support for Hypothesis 4a.

In the model for anxiety, the full model accounted for 36.7% of the variance, $F(3, 193) = 38.88$, $p < .001$. At Step 1, weight-related distress and weight-related self-devaluation were significant predictors of anxiety ($p < .001$). At Step 2, only weight-related self-devaluation remained significant ($p < .01$), and the FMS was a significant predictor ($p < .001$). Semipartial correlations showed that the FMS accounted for 13.8% unique variance in anxiety scores, providing support for Hypothesis 4b.

In the model for stress, the full model accounted for 34.0% of the variance, $F(3, 193) = 34.61$, $p < .001$. At Step 1, weight-related distress and weight-related self-devaluation were significant predictors of stress ($p < .01$). At Step 2, weight-related distress and weight-related self-devaluation remained significant ($p < .05$), and the FMS was a significant predictor ($p < .001$). Semipartial correlations showed that the FMS accounted for 7.0% unique variance in stress scores, providing support for Hypothesis 4c.

In the model for trauma symptoms, the full model accounted for 48.7% of the variance in trauma symptoms, $F(3, 193) = 63.09$, $p < .001$. At Step 1, only weight-related distress was a significant predictor of trauma symptoms ($p < .001$). At Step 2, weight-related

Table 9
Test of Incremental Validity From Study 4

Predictor	β	t	adj R^2	ΔR^2	ΔF	sr^2
		Criterion: Depression				
Step 1			.31	.31	44.39***	
WBIS-2F Distress	0.42	5.61***				.112
WBIS-2F Self-Devaluation	0.20	2.69**				.026
Step 2			.33	.02	6.28*	
WBIS-2F Distress	0.35	4.54***				.071
WBIS-2F Self-Devaluation	0.17	2.31*				.018
FMS	0.17	2.27*				.022
		Criterion: Anxiety				
Step 1			.23	.24	30.51***	
WBIS-2F Distress	0.26	3.36***				.045
WBIS-2F Self-Devaluation	0.28	3.63***				.052
Step 2			.37	.14	42.54***	
WBIS-2F Distress	0.10	1.34				.006
WBIS-2F Self- Devaluation	0.21	2.96**				.028
FMS	0.43	6.52***				.138
		Criterion: Stress				
Step 1			.27	.28	37.79***	
WBIS-2F Distress	0.37	4.79***				.085
WBIS-2F Self-Devaluation	0.22	2.93**				.032
Step 2			.34	.07	20.62***	
WBIS-2F Distress	0.59	3.25**				.036
WBIS-2F Self-Devaluation	0.69	2.35*				.018
FMS	0.94	4.54***				.070
		Criterion: TSDS				
Step 1			.32	.33	47.07***	
WBIS-2F Distress	0.49	6.58***				.151
WBIS-2F Self-Devaluation	0.13	1.76				.011
Step 2			.49	.17	64.38***	
WBIS-2F Distress	0.31	4.51***				.053
WBIS-2F Self-Devaluation	0.05	0.78				.002
FMS	0.47	8.02***				.168

Note. WBIS-2F = Two-Factor Weight Bias Internalization Scale; FMS = Fat Microaggressions Scale; TSDS = Trauma Symptoms of Discrimination Scale.
* $p < .05$. ** $p < .01$. *** $p < .001$.

distress remained significant, and the FMS was a significant predictor of trauma symptoms ($p < .001$). Semipartial correlations showed that the FMS accounted for 16.8% of the unique variance in trauma symptoms, providing support for Hypothesis 4d.

Tests of Direct, Indirect, and Mediation Effects of Fat Microaggressions

We tested a parallel mediation model to examine whether everyday experiences of fat microaggressions predicted trauma symptoms due to discrimination via weight-related distress and weight-related self-devaluation. Self-reported BMI, self-esteem, and depressive symptoms were entered into all models as covariates. We used the PROCESS macro (Model 4, Version 4.1, SPSS 28.0; Hayes, 2022) to test the direct and indirect effects of fat microaggressions (X) on trauma symptoms at Time 2 (Y) through weight-related distress at Time 2 ($M1$) and weight-related self-devaluation at Time 2 ($M2$; see Figures 5–8). We tested each fat microaggressions subscale in a separate model, resulting in four mediation models examined. We set the number of bootstrapping samples at 5,000 iterations. Bias-corrected 95% CIs were generated for each model to test the indirect effect (Shrout & Bolger, 2002). If the 95% CI limits included zero, the indirect effect was not significant. Both unstandardized and standardized path coefficients and indirect effects are reported in Figures 5–8.

These findings demonstrated a direct effect of each of the categories of fat microaggressions on trauma symptoms reported 4 weeks later, supporting Hypothesis 5a. Inconsistent with Hypothesis 5b, we did not find support for any indirect effects of fat microaggressions operating through either weight-related distress or weight-related self-devaluation, the two facets of internalized weight stigma that we expected to mediate the associations between fat microaggressions and trauma symptoms. Moreover, the FMS subscales displayed differential direct effects on

Figure 5

Standardized Path Coefficients for the Direct Experiences and TSDS Mediation Model
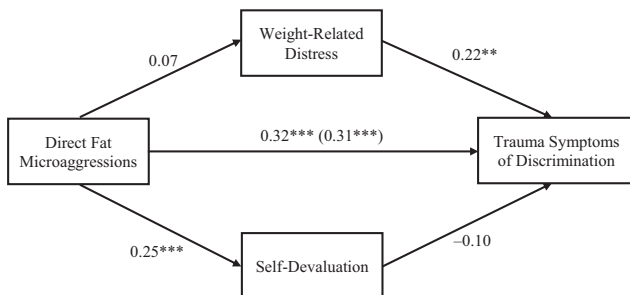
Note. Total effect is in parentheses; completely standardized indirect effect, $b = -0.01$, $SE = 0.02$, 95% CI [−0.05, 0.03]. Model explained 62.7% of variance in trauma symptoms. Unstandardized coefficients as follows. Total effect: $b = 8.46$, $SE = 1.54$, $p < .001$, 95% CI [5.41, 11.50]; direct effect: $b = 8.75$, $SE = 1.57$, $p < .001$, 95% CI [5.65, 11.84]; and indirect effect: $b = -0.29$, $SE = 0.57$, 95% CI [−1.42, 0.82]. Fat microaggressions scored from 1 to 5, weight-related distress and self-devaluation from 1 to 7, and trauma symptoms from 1 to 84. CI = confidence interval; SE = standard error; TSDS = Trauma Symptoms of Discrimination Scale.
** $p < .01$. *** $p < .001$.

Figure 6

Standardized Path Coefficients for the Indirect Experiences and TSDS Mediation Model
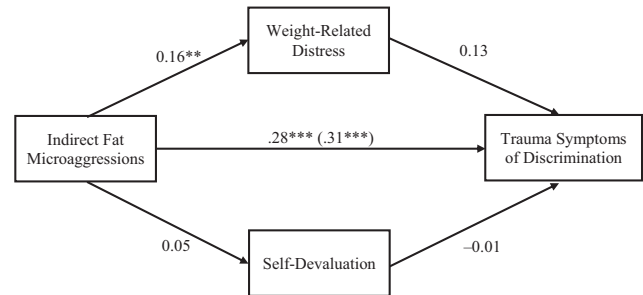
Note. Total effect is in parentheses; completely standardized indirect effect, $b = 0.02$, $SE = 0.01$, 95% CI [−0.00, 0.06]. Model explained 61.50% of variance in trauma symptoms. Unstandardized coefficients as follows. Total effect: $b = 7.10$, $SE = 1.17$, $p < .001$, 95% CI [4.79, 9.41]; direct effect: $b = 6.62$, $SE = 1.20$, $p < .001$, 95% CI [4.26, 8.98]; and indirect effect: $b = 0.48$, $SE = 0.34$, 95% CI [−0.02, 1.31]. Fat microaggressions scored from 1 to 5, weight-related distress and self-devaluation from 1 to 7, and trauma symptoms from 1 to 84. CI = confidence interval; SE = standard error; TSDS = Trauma Symptoms of Discrimination Scale.
** $p < .01$. *** $p < .001$.

weight-related distress and weight-related self-devaluation. While Benevolent Weightism demonstrated a direct effect on both self-devaluation and distress, Direct Experiences and Clothing Exclusion only impacted self-devaluation, and Indirect Experiences only distress. Notably, the covariates, BMI and self-esteem, were moderately (BMI) and strongly (self-esteem) correlated with scores on the Trauma Symptoms From Discrimination Scale, yet neither remained significant predictors of trauma symptoms in the full models.[6] Depression scores remained a statistically significant predictor of trauma symptoms in the full models (all $ps < .0001$). Covariates are omitted from the figures for parsimony.

Study 4: Discussion

We observed good test–retest reliability for the FMS over a 4-week period as well as further evidence of sound psychometric properties. We also demonstrated positive associations between the FMS and weight-related distress, weight-related self-devaluation, depression, anxiety, stress, trauma symptoms of discrimination, and negative affect, and negative associations between the FMS and self-esteem and positive affect. The FMS also accounted for additional unique variance in depression, anxiety, stress, and trauma symptoms beyond that explained by weight-related self-devaluation and distress, providing additional evidence of incremental validity. Finally, all four dimensions of the FMS directly predicted trauma symptoms due to discrimination 4 weeks later in a model with internalized weight stigma, BMI, self-esteem, and depression, whereas no indirect effects were observed through the two indicators

---

[6] BMI was also not a significant predictor of trauma symptoms in total effects models (i.e., with FMS subscales and all covariates, but not internalized weight stigma, included as predictors), ps ranged from .521 to .862. Global self-esteem was a significant predictor in total effect models, ps ranged from .001 to .010, as were depression symptoms, all $ps < .001$.

Figure 7

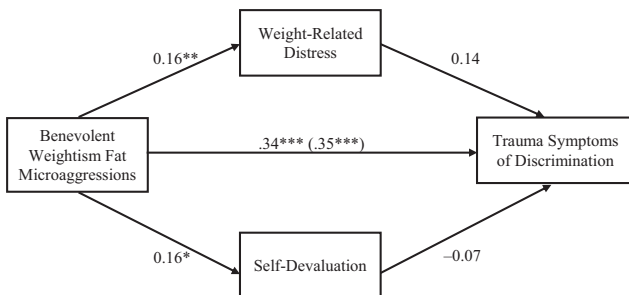*Standardized Path Coefficients for the Clothing and TSDS Mediation Model*
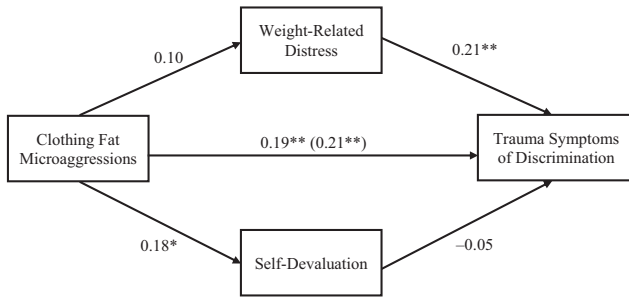
Note. Total effect is in parentheses; completely standardized indirect effect, $b = 0.01$, $SE = 0.02$, 95% CI [−0.02, 0.06]. Model explained 58.2% of variance in trauma symptoms. Unstandardized coefficients as follows. Total effect: $b = 3.23$, $SE = .97$, $p < .001$, 95% CI [1.31, 5.15]; direct effect: $b = 3.06$, $SE = 0.98$, $p < .001$, 95% CI [1.12, 4.99]; and indirect effect: $b = 0.18$, $SE = 0.31$, 95% CI [−0.38, 0.88]. Fat microaggressions scored from 1 to 5, weight-related distress and self-devaluation from 1 to 7, and trauma symptoms from 1 to 84. CI = confidence interval; SE = standard error; TSDS = Trauma Symptoms of Discrimination Scale.
* $p < .05$.   ** $p < .01$.

of internalized weight-related stigma. These findings underscore the potency of fat microaggressions in relation to the mental well-being of fat individuals both concurrently and over time.

General Discussion

The concept of microaggressions has been applied to understand the unique and nuanced experiences of everyday discrimination for members of stigmatized groups. Here, we applied the microaggression

Figure 8

Standardized Path Coefficients for the Benevolent Weightism and TSDS Mediation Model

Note. Total effect is in parentheses; completely standardized indirect effect, $b = 0.01$, $SE = 0.02$, 95% CI [−0.02, 0.05]. Model explained 65.2% of variance in trauma symptoms. Unstandardized coefficients as follows. Total effect: $b = 6.73$, $SE = 0.93$, $p < .001$, 95% CI [4.88, 8.57]; direct effect: $b = 6.51$, $SE = 0.96$, $p < .001$, 95% CI [4.62, 8.41]; and indirect effect: $b = 0.21$, $SE = 0.30$, 95% CI [−0.31, 0.90]. Fat microaggressions scored from 1 to 5, weight-related distress and self-devaluation from 1 to 7, and trauma symptoms from 1 to 84. CI = confidence interval; SE = standard error; TSDS = Trauma Symptoms of Discrimination Scale.
* $p < .05$.   ** $p < .01$.   *** $p < .001$.

framework to the experiences of fat people by developing and testing a new measure of fat microaggressions. Grounded in the lived experiences of diverse fat adults, evidence was observed for the substantive, structural, and external validity, as well as the internal and test–retest reliability, of the FMS (see Table 1). Findings across four studies supported a 40-item measure of fat microaggressions with a four-factor structure that covers direct discrimination, indirect discrimination, benevolent weightism in the form of being prescribed unsolicited weight loss and dieting advice, and clothing-related exclusion. Experiencing fat microaggressions was associated with more psychological distress, worse self-rated health, more internalized weight stigma, and choosing to restrict activities across several domains of daily life. We also found that fat microaggressions predicted more trauma symptoms from discrimination 1 month later, independent of internalized weight stigma, underscoring the significance of encounters with fat microaggressions for the social and mental well-being of fat individuals. It is notable that, while high BMI is often linked with negative physical and mental well-being, for the most part, BMI was not a significant predictor of either psychological or behavioral downstream outcomes when accounting for experienced microaggressions.

The FMS accounted for unique variance in indicators of well-being when tested together with the SSI-B, one of the earliest measures of experienced weight stigma, and the SSI-B no longer predicting perceived stress after adding FMS to the model, indicating its incremental value for assessing weight-based discrimination. Moreover, we found that scores on the SSI-B were correlated more strongly with scores on the Direct Experiences factor of the FMS, compared with Indirect Experiences, Benevolent Weightism, and Clothing Exclusion, with a closer inspection of the items supporting the idea that the SSI-B assesses primarily explicit and often openly hostile experiences of weight bias and not the more indirect and insidious ways that fat microaggressions can be levied and experienced. Given that the highest mean scores on the FMS were for the Indirect Experiences factor, the FMS appears to capture a patterning of microaggressions that is not covered by existing scales and can advance knowledge in this area.

An Initial Fat Microaggressions Taxonomy

These findings offer a new framework for organizing and understanding fat microaggressions around how fat individuals encounter these experiences of discrimination in their everyday lives. Fat individuals encounter fat microaggressions through direct experiences (e.g., not able to fit in restaurant seats), indirect experiences (e.g., overhearing someone say they "feel" fat), benevolent weightism (e.g., receiving unsolicited tips for weight loss), and the inaccessibility of clothes for larger bodies (e.g., cannot find clothes that fit). Most existing measures of weight stigma distinguish types of experiences by the source or the context. Yet, in the present research, psychometric testing of a large item pool produced a different taxonomy. The four factors of the FMS each comprised a mix of sources (e.g., medical professionals, public others, online posts) and contexts (e.g., public spaces, media, relationships), underscoring that it is not necessarily who perpetrates the microaggressions or where and in what context, but the ways in which fat people come up against and endure these microaggressions in everyday life that meaningfully organize and distinguish these experiences.

We also suggest that our structuring of fat microaggressions along a pattern of encounters aligns with the conceptualization of microaggressions as a disciplinary technique (Bartky, 1990, 2010; Reiheld, 2020). We identified specific patterns of penalizing fat individuals for being fat through direct encounters, indirect and vicarious encounters, explicit talk about size and weight control, and limiting access to clothes for "unruly" bodies. We also found that these fat microaggressions make their way under the skin, whereby fat individuals become their own first surveyors and arbiters of exacting penalties against themselves for noncompliance with bodily norms through internalized weight stigma. The penalizing of individuals by fat microaggressions also extends to those who are not (yet) fat as well, cautioning them not to join (or return to) this marginalized group:

> Microaggressions serve as a disciplinary mechanism for bodies unruly in their fatness, and for those whose bodies may one day become unruly. No one is exempt, not even those who conform through effort or luck … *the bodies of those exempt from oppression are still subject to bodily disciplinarity through the same kinds of mechanisms and in support of oppressive norms.* (Reiheld, 2020, pp. 206/220 [italics in original])

In these ways, fat microaggressions serve a disciplinary function by enforcing bodily norms and practices that justify the marginalization of fat individuals and serve as reminders that *all bodies* are under constant surveillance.

The content reflected in the Direct Experiences items includes interpersonal interactions (e.g., receiving a dirty look, being called a name, someone acting surprised when they learn a fat individual has a romantic partner) and structural experiences (e.g., not being able to fit comfortably through turnstiles or in seats) that fat individuals encounter firsthand across a variety of contexts and sources (e.g., grocery store, at the gym, social media). The regularity and potency of these direct experiences and their unique connection to trauma symptoms underscore the significance of these encounters for the well-being of fat individuals. The salience and quality of these direct acts of weight-based discrimination in the lives of fat people also challenge the prevailing wisdom in contemporary microaggression literature that microaggressions are largely unintentional and more often tethered to implicit than explicit bias.

The content reflected in the Indirect Experiences items includes fat microaggressions that are experienced vicariously by observing them being communicated to others or in more generalized public forums (e.g., social media). For example, some items refer to witnessing the poor treatment of fat characters portrayed in television and films, online comments that shame people for being fat, or headlines that warn about being fat. Other items refer to witnessing friends or other people ridiculing another fat person or calling themselves fat in a disparaging manner. It is noteworthy that across all samples, these indirect microaggressions were rated as the most frequently encountered; it is also noteworthy that these are specific, meaningful experiences that are missing from existing measures of weight stigma. For example, the SSI doesn't contain a single item relating to any form of media as a source of weight stigma (Lindloff & Meadows, 2023), despite the now well-documented pervasiveness of weight-stigmatizing content in print, broadcast, and social media (Ata & Thompson, 2010). Writing in the context of racism in the United States, Harrell (2000) noted that both news and entertainment media are potent sources of cultural values and mores of a time, serve to maintain and perpetuate structural

inequalities, and deliver a constant stream of vicarious racism, which in turn is linked with race-related stress (Harrell, 2000). Indeed, using data from over 90,000 women who completed the Project Implicit Weight Implicit Association Test between 2004 and 2015, a recent study traced the impact of 20 celebrity fat-shaming events in the media over that period and linked them to spikes in women's implicit antifat attitudes, with a general trend of increasing implicit antifat attitudes over time (Ravary et al., 2019). The authors noted that seemingly trivial media stories nevertheless seep through into the body politic.

The items comprising the Indirect Experiences factor differ in their context, source, and form, but cluster together around the route in which they are communicated, underscoring the relevance and meaningfulness of not only being the direct target of fat microaggressions, but also observing these everyday indignities being perpetrated against other fat people, being exposed to such treatment in more generalized social forums (e.g., on social media or in the news), and hearing other people of all sizes make comments about their own weight, dieting, and "feeling fat." While an individual may not be the direct target of this type of microaggression, indirect stigma has been linked to poorer physical health and mental well-being in people of color (Huynh et al., 2017; Paradies et al., 2015), worse psychological well-being in racial and sexual minorities and people with mental and physical illnesses and disabilities (Schmitt et al., 2014), and impacting on educational (Meadows et al., 2023; Silverschanz et al., 2008) and employment (Bradley-Geist et al., 2015; Ragins & Cornwell, 2001) climate and outcomes across a number of stigmatized groups. These results suggest that stigmatized groups do not need to be on the direct receiving end of an attack to feel its impacts. The totality of the lived experience of people in groups marginalized by society is represented not only by their own direct experiences with stigma but also by the cumulative signaling by others of deviance and inferiority, indicating that their environment is hostile to their existence and that they are not a valued member of that society.

The content of the Benevolent Weightism items represents the various ways that fat individuals are shamed, blamed, and patronized by others under the guise of concern for their health and well-being. Similar to benevolent sexism, which prescribes women should be warm, kind, and nurturing and thus require protection and support from men, continuing to oppress and devalue women but under a guise of kindness (Glick & Fiske, 1996), benevolent weightism highlights a commonly held assumption that fat people could and should want to lose weight (Calogero et al., 2019), and therefore outsiders have the right, even an obligation, to prescribe and advise on dieting, exercise, and weight loss. In addition to the implied benevolence of these prescriptions, another notable feature of the items is that the weight loss prescriptions and advice are unsolicited and just as likely to come from strangers as friends and family. Most fat people will have tried numerous methods of weight loss in their lifetime (Ikeda et al., 2004; Santos et al., 2017). The myriad reasons that weight-loss attempts fail over the long term are well documented (Calogero et al., 2019; Sumithran & Proietto, 2013). Indeed, not only are intentional weight-loss efforts likely to be unsuccessful (D. Crawford et al., 2000; Fildes et al., 2015; Rothblum, 2018), but they are also linked to greater weight gain and worse physical and psychological health outcomes, independent of starting BMI (Hunger et al., 2020; Mann et al., 2007). Yet many of the microaggressions involving unsolicited weight-loss prescriptions imply that fat people are lazy and have never attempted weight

loss ("Have you tried dieting?") or are too unintelligent to understand the concept ("It's just calories in, calories out. It's really quite simple"; Leung et al., 2024). Overall, fat microaggressions communicated as benevolent weightism, even with a positive veneer, represent another way that people in fat bodies are treated as unacceptable or undesirable and instructed on how to fix themselves. The intrusiveness and pervasiveness of these prescriptions further underscore the everyday indignity, boundary violation, and humiliation endured by fat people through these experiences.

Finally, the content of the Clothing Exclusion items captures a variety of ways that fat individuals experience exclusion through the lack of access to clothes that fit their bodies, an experience that has yet to be quantitatively measured (Gerend et al., 2021; Owen, 2012), except for one study focusing specifically on exercise apparel (Greenleaf et al., 2019). Where larger clothing sizes are available, the clothes are often more expensive or less stylish. Despite the promise that some clothing will fit all bodies, many products advertised as "one size fits all" or "inclusive" still have a limited size range. Though we initially expected clothing-related items to converge with other structural items (e.g., "I am not able to comfortably fit through aisles or turnstiles") under an environmental microaggressions factor, the clustering of the clothing-related items under their own independent factor reflects an underappreciated everyday indignity and penalty encountered by fat individuals in merely trying to find clothes to wear, not only for work or special occasions but in their daily lives (Christel et al., 2016; Hunt & Rhodes, 2018). The lack of access and availability of clothes that fit, especially stylish clothes, for people living in larger bodies not only serves as a microaggressive experience for fat individuals but communicates to everyone that fat bodies are not valid, legitimate, or deserving of clothing at their larger size. That is, clothing does not exist for bodies that should not exist. Thus, clothing exclusion, which might appear to be a relatively minor inconvenience to observers for whom it is not an issue, speaks to a structural form of oppression that reinforces the denial of one's humanity.

The lack of availability and access to clothes for fat bodies has been acknowledged both anecdotally and in past qualitative research. In fact, fat activist Ash Nischuk developed a categorization method for describing fat bodies (that does not rely on medicalized BMI categories) based on the ease with which one can purchase clothing in their size, which acts as a proxy for degrees of societal exclusion and oppression and includes the categories "small fat," "midfat," "superfat," and "infini fat" (Linda, 2021). The latter two categories are often missing entirely from research in the weight stigma field, yet experiences of weight stigma and fat microaggressions for a small-fat person will not be the same as those for a superfat or infini-fat person. It is compelling that the fat categorization method outlined above, which is based on ease of accessing clothes that fit and which was developed organically by members of fat liberation communities as a proxy for degrees of systemic oppression, should emerge so prominently as a factor within the present taxonomy of fat microaggressions.

Reflecting on the Departure From Sue et al.'s Framework

We would be remiss if we did not acknowledge that the factor structure of the FMS departed from the Sue et al. (2007) taxonomy for microaggressions. Sue et al.'s framework was initially developed in the context of racial microaggressions to illuminate the often hidden and undetectable everyday racial discrimination endured by racial minorities and the health and other negative consequences of these everyday indignities. While this highly influential framework has moved the needle in racial microaggressions research, it tends to be applied indiscriminately to other marginalized groups, despite being rooted in the experiences of people of color. Our departure from Sue et al.'s framework is not surprising when we consider that the everyday indignities experienced by members of one marginalized group cannot be assumed to be the same as those experienced by members of another marginalized group. We can see with fat microaggressions, for example, that encounters with benevolent weightism and clothing exclusion represent unique experiences for fat individuals. Moreover, the blatant versus subtle forms of discrimination that emerge as important in Sue et al.'s framework (i.e., microassaults vs. microinsults and microinvalidations) did not distinguish different categories of fat microaggressions in our framework, with blatant, subtle, hostile, and benevolent forms of weight discrimination represented across all categories.

We would also argue that the intentionality (or lack thereof) presumed to underlie racial microaggressions does not apply in the same way to fat microaggressions. Essentially, all items comprising the FMS reflect some degree of intentionality on the part of the perpetrators and/or built environment, whereas the categories of racial microaggressions tend to be described as automatic or unconscious and often unintentional (Solórzano et al., 2000). Indeed, emboldened by the "war on obesity" in Westernized societies (Greenhalgh, 2015; O'Hara & Taylor, 2018) and the belief that weight is controllable and malleable, people are generally comfortable openly expressing antifat attitudes and feel justified, and even obligated, to do so, especially when it is framed as "helping them" (Cain et al., 2017; Holi, 2019). Given the ways in which fat individuals encounter fat microaggressions, as they emerged in the FMS, they appear not only intentional but without limits in how they are expressed—direct and indirect judgments and criticisms across public and private spaces, the normative derogation of fatness in public and social spaces online and offline, and the everyday environment, literally, not being built to fit all bodies. In this case, fat microaggressions are not so much hidden as they are legitimized in society and veiled by a veneer of benevolence.

We would also note that other quantitative measures of microaggressions have shown departures from Sue et al.'s (2007) framework, such as for ableist and sexual orientation microaggressions (Conover et al., 2017; Nadal, 2019). For example, Conover et al. (2017) named a "helplessness" category, reflecting that disabled people are often treated as or assumed to be dependent or incapable of performing tasks without assistance, and Nadal (2019) named an "assumptions of deviance" category for sexual orientation microaggressions rooted in the false narratives that sexual minorities are predators, have HIV/AIDS, or are "unnatural." Overall, these findings suggest a revisiting of the framework in the context of microaggressions directed toward other marginalized groups. Taken together, previous and current research on microaggressions has demonstrated that the Sue et al. (2007) framework may not neatly apply to all stigmatized groups' experiences, and we should not expect it to do so. Future research on microaggressions should consider the unique histories of marginalized groups, as well as the disciplining function of microaggressions, to advance knowledge of microaggressions and how to challenge them.

Limitations and Future Directions

This series of studies is not without limitations. Certainly, the final 40-item measure is limited in its coverage of content. While the

four factors formed a cohesive measure, they do not represent an exhaustive list of fat microaggressive experiences. While items were eliminated to produce a measure that could be administered feasibly in research, it is the case that many of the items removed are relevant to the experience of fat microaggressions. For example, many of the health-care-related items, such as doctors blaming unrelated physical issues on their patients' weight, did not load above .40 on any factor during the EFA stage and were subsequently removed. However, these experiences represent harmful fat microaggressions with serious implications. Fat microaggressions and stigmatization perpetrated by health care providers cause many fat individuals to avoid or delay future health care visits (Mensinger et al., 2018; Pausé, 2014). Increased health care avoidance, as well as dismissal from health care providers, contributes to fat patients not receiving potentially lifesaving preventative care (J. A. Lee & Pausé, 2016; Pausé, 2014). Additionally, while we made systematic decisions for removing items across a series of EFAs, it is possible that others would have made different choices, resulting in a somewhat different final scale. Clinicians who wish to inquire about their patients' experiences of weight-related microaggressions should not necessarily limit themselves to the 40 items on the final scale and may use a previous version with more items.[7] Further, in our instructions to participants, we did not invite them to consider their experiences within a certain time frame, but rather how often they are targets of fat microaggressions on a day-to-day basis. When implementing the scale in future work, researchers may consider asking participants to report about their experiences within a specific time frame (e.g., "in the last 3 months").

It is noteworthy that microaggressions across a wide variety of domains and perpetrators coalesced very clearly into two main types of stigma experiences—direct and indirect—which would likely have been grouped as separate categories in older measures of experienced weight stigma. Indirect experiences of stigma have been shown to be important and harmful in the prejudice literature, yet measures of observed stigma remain somewhat underutilized (Ozier et al., 2019). It is hoped that the Indirect Experiences subscale of the FMS will go some way toward remedying this lacuna, at least in the field of weight stigma research. It is also noteworthy that the two domain-specific subscales that emerged strongly in our analysis and were retained in the final scale are both unique to the lived experience of fat people—clothing exclusion and unsolicited weight-loss prescriptions. These domains are unlikely to apply to other frequently studied marginalized groups, and their dominance within the FMS corroborates the importance of soliciting the voices of the target group in scale development. It is also likely that centering the voices of fat people embedded in the fat activism community, as was achieved in the present study by incorporating Tweets using the #fatmicroaggressions hashtag, captures experiences of fat people who are more likely to be aware of stigma than those in general or treatment-seeking communities (Meadows & Daníelsdóttir, 2016), resulting in the generation of items that may not have been identified otherwise but that will nevertheless be recognizable by fat individuals outside of this community, independent of their attitudes toward their own fatness. Thus, this work highlights an approach that may be of value in the study of microaggressions more broadly and suggests an alternative framework for the quantification of different types of stigma experiences.

The studies are also limited by the less-than-hoped-for diversity of the samples. While we tried to target different racial groups, the samples for Studies 3 and 4 were less racially diverse than Study 2

and had a higher percentage of White participants (about 40%). Most participants were also heterosexual, cisgender, and on the lower end of the fat spectrum. Including greater diversity with respect to these identities is important for the study of intersectional experiences of fat microaggressions. For example, one qualitative study that examined fat microaggressions among fat participants in higher education noted that nearly all gay, lesbian, and gender-non-conforming participants experienced greater discrimination regarding their clothing (Hunt & Rhodes, 2018). In its current form, the FMS may also be limited to use in English-speaking populations in Western cultures. Further, some items may be limited to contexts with accessible media and social media given some of the items refer specifically to these sources.

Similarly, and consistent with prior research on weight stigma more broadly (Spahlholz et al., 2016), we found that higher weight people within our samples experienced microaggressions more frequently. Therefore, including weight diversity across the fat spectrum in research is also important to ensure that those who may be most harmed are not excluded. Efforts were made at the item development stage to ensure that the pool of potential items, and those items undergoing subsequent psychometric validation, represented a range of diverse lived experiences across the fat spectrum. Future fat microaggression research should further examine microaggressive experiences across the fat spectrum and intersections of weight with other marginalized identities. Qualitative studies, such as the one by Hunt and Rhodes (2018), may further examine how weight intersects with gender, race, and sexual identity, and the resulting microaggressive experiences at these intersections. Scholars in other areas of microaggression research have developed scales to quantitatively assess microaggressions for intersecting identities, including gendered racial microaggression (J. A. Lewis & Neville, 2015) and lesbian, gay, bisexual, and transgender racial microaggressions (Balsam et al., 2011). A future scale may focus on intersectional fat microaggressions. Considering that it would be both impossible and unnecessary to create a microaggressions scale for each intersecting identity, Singh et al. (2021) recommend that future scale development work focus on groups that are facing oppression in the current sociocultural and political environments. For example, fat Black people face greater dismissal from health care providers due to both their weight and race (Mollow, 2017; Wilson, 2009), and trans individuals report fatphobia as a barrier to gender transition care (Koehle, 2017). Future research should focus on populations who are disproportionately burdened and harmed by intersectional weight stigma.

Future research using the FMS should examine its associations with mental, behavioral, and physiological health outcomes, such as eating pathology, sleep quality, social isolation, and cortisol levels. Potential moderators of these variables, such as various coping skills and strategies, should also be investigated. Combined with advances in ambulatory biopsychosocial assessment technology, future studies could also look at the impact of stigma coping styles, both for their impact on targets and on attitudes and behaviors of perpetrators of microaggressions. The initial findings suggest differential consequences for the different types of fat microaggressions, thus identifying specific mechanisms and potential targets for stigma awareness campaigns and interventions warrants more attention.

---

[7] The previous 177-item version of the FMS is available at https://doi.org/10.17605/OSF.IO/9NPG2.

Longitudinal studies with the FMS are also needed to better understand when and where these microaggressions occur and their impact. It must be remembered, however, that the impact of microaggressions goes beyond individual harms. It is not the act itself that creates harm; when addressed to a member of a non-marginalized group, a comment that may be considered rude or thoughtless, the inaccessibility of clothing in your size on the high street, or an unpleasant look from the person sitting next to you on an airplane, can be dismissed as individual rudeness or inconvenience. By their very nature, microaggressions are directed at marginalized groups and perpetuate systems of oppression by serving as reminders of their marginalized status and shaping the very stigma that upholds the marginalized status of these groups in society (McTernan, 2018).

Since the completion of this research, we became aware of a related scale, the Weight-related Microaggression Experiences Questionnaire (Webb et al., 2019), which has since been renamed the Anti-Fat Microaggression Experiences Questionnaire (AFMEQ) and used to examine negative associations between experiencing antifat microaggressions, body appreciation, and physical and mental health (O'Neill et al., 2023). Research attention to the study and measurement of fat microaggressions is sorely needed and we were excited to learn of this work. We observed some meaningful distinctions between the measures. Notably, the AFMEQ continues to adhere to Sue et al.'s (2007) three forms for grouping fat microaggressions, albeit with the addition of a media factor, whereas the factor structure of the FMS could not be interpreted through the lens of Sue et al.'s (2007) categories. We also noted that the items assessing media-related microaggressions differed between the two scales regarding their focus on how participants *feel* about fatness portrayed in the media (AFMEQ) versus how they *encounter* fatness portrayed in the media (FMS). We moved away from items worded as "felt" in our language with the FMS because we were interested in capturing what respondents indicated happened—giving credit to participants' lived experience. As summarized above, empirical evidence supports the contention that both perpetrators and targets can recognize and interpret microaggressions. We wished to avoid framing fat microaggressions as an ephemeral belief located only in the mind of the target. We do not suggest that the intentions of scholars using the words "felt" or "perceived" in relation to prejudice are to devalue the targets' experience, and this language often follows historical research in this area; however, in the context of recent challenges to the microaggressions framework, and the growing body of evidence that counters these challenges, we believe that this choice of words is particularly important.

Conclusion

Across four studies, we developed and validated a comprehensive scale of fat microaggressions, the FMS, derived from the lived experience of fat people, to measure the experience of fat microaggressions in quantitative research. Higher scores on the scale were associated with more negative health and behavioral outcomes, including poorer mental health outcomes and more voluntary restriction of everyday social activities. The structure of the scale provides an initial novel framework for naming fat microaggressions and helps to illuminate the offensive landscape that fat people must traverse in their day-to-day lives. As part of everyday social discourse, fat microaggressions harm fat individuals themselves and those who are not (yet) fat, amplifying and instantiating fears of being and

becoming fat and reinforcing a system of fat oppression that teaches us to keep all bodies under control. This research underscores the need for fat microaggressions to be included in the larger fields of microaggression and prejudice research. We hope that the FMS will be used to further advance the study of fat microaggressions as a unique and potent form of weight stigma and discrimination and draw attention to the subtle and not-so-subtle ways in which our everyday lives have become imbued with antifat rhetoric and sentiment that harms us all.

References

Akoury, L. M., Schafer, K. J., & Warren, C. S. (2019). Fat women's experiences in therapy: "You Can't See Beyond … Unless I share It with You." *Women & Therapy*, *42*(1–2), 93–115. https://doi.org/10.1080/02703149.2018.1524063

Ashline, L. (2020). *Our pain your gain. Body Liberation Photography Blog*. https://bodyliberationphotos.com/2020/06/19/fat-pain-does-not-equal-your-gain/

Ata, R. N., & Thompson, J. K. (2010). Weight bias in the media: A review of recent research. *Obesity Facts*, *3*(1), 41–46. https://doi.org/10.1159/000276547

Balsam, K. F., Molina, Y., Beadnell, B., Simoni, J., & Walters, K. (2011). Measuring multiple minority stress: The LGBT People of Color Microaggressions Scale. *Cultural Diversity and Ethnic Minority Psychology*, *17*(2), 163–174. https://doi.org/10.1037/a0023244

Banks, B. M., & Landau, S. (2022). Take a deep breath: Coping and the cognitive consequences of racial microaggression among Black college women. *Journal of College Student Psychotherapy*. Advance online publication. https://doi.org/10.1080/87568225.2022.2100855

Barber, S., Gronholm, P. C., Ahuja, S., Rüsch, N., & Thornicroft, G. (2020). Microaggressions towards people affected by mental health problems: A scoping review. *Epidemiology and Psychiatric Sciences*, *29*(82), Article e82. https://doi.org/10.1017/S2045796019000763

Bartky, S. L. (1990). *Femininity and domination: Studies in the phenomenology of oppression*. Routledge.

Bartky, S. L. (2010). Foucault, femininity, and the modernization of patriarchal power. In R. Weitz (Ed.), *The politics of women's bodies: Sexuality, appearance and behavior* (pp. 76–98). Oxford University Press.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238–246. https://doi.org/10.1037/0033-2909.107.2.238

Benyamini, Y. (2016). Self-rated health. In Y. Benyamini, M. Johnston, & E. C. Karademas (Eds.), *Assessment in health psychology* (pp. 175–188). Hogrefe.

Bidstrup, H., Brennan, L., Kaufmann, L., & de la Piedad Garcia, X. (2022). Internalised weight stigma as a mediator of the relationship between experienced/perceived weight stigma and biopsychosocial outcomes: A systematic review. *International Journal of Obesity*, *46*(1), 1–9. https://doi.org/10.1038/s41366-021-00982-4

Bowleg, L. (2013). "Once you've blended the cake, you can't take the parts back to the main ingredients": Black gay and bisexual men's descriptions and experiences of intersectionality. *Sex Roles*, *68*(11–12), 754–767. https://doi.org/10.1007/s11199-012-0152-4

Bradley-Geist, J. C., Rivera, I., & Geringer, S. D. (2015). The collateral damage of ambient sexism: Observing sexism impacts bystander self-esteem and career aspirations. *Sex Roles*, *73*(1–2), 29–42. https://doi.org/10.1007/s11199-015-0512-y

Bryant-Davis, T. (2019). Microaggressions: Considering the framework of psychological trauma. In G. C. Torino, D. P. Rivera, C. M. Capodilupo, K. L. Nadal, & D. W. Sue (Eds.), *Microaggression theory: Influence and implications* (pp. 3–15). Wiley.

Cain, P., Donaghue, N., & Ditchburn, G. (2017). Concerns, culprits, counsel, and conflict: A thematic analysis of "obesity" and fat discourse in digital

news media. *Fat Studies: An Interdisciplinary Journal of Body Weight and Society*, 6(2), 170–188. https://doi.org/10.1080/21604851.2017.1244418

Calogero, R. M., Tylka, T. L., & Mensinger, J. (2016). Scientific weightism: A view of mainstream weight stigma research through a feminist lens. In T-A. Roberts, N. Curtin, L. E. Duncan, & L. Cortina (Eds.), *Feminist perspectives on building a better psychological science of gender* (pp. 9–28). Springer. https://doi.org/10.1007/978-3-319-32141-7_2

Calogero, R. M., Tylka, T. L., Mensinger, J. L., Meadows, A., & Daníelsdóttir, S. (2019). Recognizing the fundamental right to be fat: A weight-inclusive approach to size-acceptance and healing from sizeism. *Women & Therapy*, 42(1–2), 22–44. https://doi.org/10.1080/02703149 .2018.1524067

Chalmers, J., & Armour, M. (2019). The Delphi technique. In P. Liamputtong (Ed.), *Handbook of research methods in health social sciences* (pp. 715–735). Springer. https://doi.org/10.1007/978-981-10-5251-4_99

Christel, D. A., O'Donnell, N. H., & Bradley, L. A. (2016). Coping by crossdressing: An exploration of exercise clothing for obese heterosexual women. *Fashion and Textiles*, 3, Article 11. https://doi.org/10.1186/s40691-016-0063-z

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385–396. https://doi.org/10.2307/2136404

Conover, K. J., & Israel, T. (2019). Microaggressions and social support among sexual minorities with physical disabilities. *Rehabilitation Psychology*, 64(2), 167–178. https://doi.org/10.1037/rep0000250

Conover, K. J., Israel, T., & Nylund-Gibson, K. (2017). Development and validation of the Ableist Microaggressions Scale. *The Counseling Psychologist*, 45(4), 570–599. https://doi.org/10.1177/0011000017715317

Costa, P. L., McDuffie, J. W., Brown, S., He, Y., Ikner, B. N., Sabat, I. E., & Miner, K. N. (2022). Microaggressions: Mega problems or micro issues? A meta-analysis. *Journal of Community Psychology*, 51(1), 137–153. https://doi.org/10.1002/jcop.22885

Cramer, P., & Steinwert, T. (1998). Thin is good, fat is bad: How early does it begin? *Journal of Applied Developmental Psychology*, 19(3), 429–451. https://doi.org/10.1016/S0193-3973(99)80049-5

Crawford, D., Jeffery, R. W., & French, S. A. (2000). Can anyone successfully control their weight? Findings of a three year community-based study of men and women. *International Journal of Obesity*, 24(9), 1107–1110. https://doi.org/10.1038/sj.ijo.0801374

Crawford, J. R., & Henry, J. D. (2004). The positive and negative affect schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 43(3), 245–265. https://doi.org/10.1348/0144665031752934

DePierre, J. A., & Puhl, R. M. (2012). Experiences of weight stigmatization: A review of self-report assessment measures. *Obesity Facts*, 5(6), 897–918. https://doi.org/10.1159/000346259

Durso, L. E., & Latner, J. D. (2008). Understanding self-directed stigma: Development of the weight bias internalization scale. *Obesity*, 16(Suppl. 2), S80–S86. https://doi.org/10.1038/oby.2008.448

Emmer, C., Bosnjak, M., & Mata, J. (2020). The association between weight stigma and mental health: A meta-analysis. *Obesity Reviews*, 21(1), Article e12935. https://doi.org/10.1111/obr.12935

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272–299. https://doi.org/10.1037/1082-989X.4.3.272

Fatima, S. (2019). I know what happened to me: The epistemic harms of microaggressions. In L. Freeman & J. Weekes-Schroer (Eds.), *Microaggressions and philosophy* (pp. 163–183). Routledge.

Fildes, A., Charlton, J., Rudisill, C., Littlejohns, P., Prevost, A. T., & Gulliford, M. C. (2015). Probability of an obese person attaining normal body weight: Cohort study using electronic health records. *American Journal of Public Health*, 105(9), e54–e59. https://doi.org/10.2105/AJPH .2015.302773

Flake, J. K., Pek, J., & Hehman, E. (2017). Construct validation in social and personality research: Current practice and recommendations. *Social Psychological and Personality Science*, 8(4), 370–378. https://doi.org/10 .1177/1948550617693063

Fritz, M. S., & Mackinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science*, 18(3), 233–239. https://doi.org/10 .1111/j.1467-9280.2007.01882.x

Gerend, M. A., Patel, S., Ott, N., Wetzel, K., Sutin, A. R., Terracciano, A., & Maner, J. K. (2021). A qualitative analysis of people's experiences with weight-based discrimination. *Psychology & Health*, 37(9), 1093–1110. https://doi.org/10.1080/08870446.2021.1921179

Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology*, 70(3), 491–512. https://doi.org/10.1037/0022-3514.70 .3.491

Greenhalgh, S. (2015). *Fat talk nation: The human cost of America's war on fat*. Cornell University Press.

Greenleaf, C., Hauff, C., Klos, L., & Serafin, G. (2019). "Fat people exercise too!": Perceptions and realities of shopping for women's plus-size apparel. *Clothing and Textiles Research Journal*, 38(2), 75–89. https://doi.org/10 .1177/0887302X19878507

Haidt, J. (2017). The unwisest idea on campus: Commentary on Lilienfeld (2017). *Perspectives on Psychological Science*, 12(1), 176–177. https:// doi.org/10.1177/1745691616667050

Harrell, S. P. (2000). A multidimensional conceptualization of racism-related stress: Implications for the well-being of people of color. *American Journal of Orthopsychiatry*, 70(1), 42–57. https://doi.org/10.1037/h0 087722

Harriger, J. A., Calogero, R. M., Witherington, D. C., & Smith, J. E. (2010). Body size stereotyping and internalization of the thin ideal in preschool-age girls. *Sex Roles*, 63(9–10), 609–620. https://doi.org/10.1007/s11199-010-9868-1

Hatzenbuehler, M. L. (2009). How does sexual minority stigma "get under the skin"? A psychological mediation framework. *Psychological Bulletin*, 135(5), 707–730. https://doi.org/10.1037/a0016441

Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). Guilford Press.

Hayward, L. E., Vartanian, L. R., & Pinkus, R. T. (2018). Weight stigma predicts poorer psychological well-being through internalized weight bias and maladaptive coping responses. *Obesity*, 26(4), 755–761. https:// doi.org/10.1002/oby.22126

Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 44(2), 227–239. https://doi.org/10.1348/014466505X2 9657

Hodson, G. (2021). Pushing back against the microaggressions pushback in academic psychology: Reflections on a concept-creep paradox. *Perspectives on Psychological Science*, 16(5), 932–955. https://doi.org/ 10.1177/1745691621991863

Holi, E. (2019). *Health concerns and moral distaste—'concern trolling' as a moralizing rhetoric* [Unpublished master's thesis]. Aalto University. https://aaltodoc.aalto.fi/handle/123456789/37948

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. https://doi.org/10.1080/107055199095 40118

Hunger, J. M., Major, B., Blodorn, A., & Miller, C. T. (2015). Weighed down by stigma: How weight-based social identity threat contributes to weight gain and poor health. *Social and Personality Psychology Compass*, 9(6), 255–268. https://doi.org/10.1111/spc3.12172

Hunger, J. M., Smith, J. P., & Tomiyama, A. J. (2020). An evidence-based rationale for adopting weight-inclusive health policy. *Social Issues and Policy Review*, 14(1), 73–107. https://doi.org/10.1111/sipr.12062

Hunger, J. M., & Tomiyama, A. J. (2018). Weight labeling and disordered eating among adolescent girls: Longitudinal evidence from the National Heart, Lung, and Blood Institute Growth and Health Study. *Journal of Adolescent Health*, *63*(3), 360–362. https://doi.org/10.1016/j.jadohealth.2017.12.016

Hunt, A. N., & Rhodes, T. (2018). Fat pedagogy and microaggressions: Experiences of professionals working in higher education settings. *Fat Studies: Improving Teaching and Learning for EveryBODY*, *7*(2), 21–32. https://doi.org/10.1080/21604851.2017.1360671

Huynh, V. W., Huynh, Q.-L., & Stein, M.-P. (2017). Not just sticks and stones: Indirect ethnic discrimination leads to greater physiological reactivity. *Cultural Diversity and Ethnic Minority Psychology*, *23*(3), 425–434. https://doi.org/10.1037/cdp0000138

Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: A review of twenty-seven community studies. *Journal of Health and Social Behavior*, *38*(1), 21–37. https://doi.org/10.2307/2955359

Ikeda, J. P., Lyons, P., Schwartzman, F., & Mitchell, R. A. (2004). Self-reported dieting experiences of women with body mass indexes of 30 or more. *Journal of the American Dietetic Association*, *104*(6), 972–974. https://doi.org/10.1016/j.jada.2004.03.026

Johnson, V. E., Nadal, K. L., Sissoko, D. R. G., & King, R. (2021). "It's not in your head": Gaslighting, 'splaining, victim blaming, and other harmful reactions to microaggressions. *Perspectives on Psychological Science*, *16*(5), 1024–1036. https://doi.org/10.1177/17456916211011963

Kattari, S. K. (2020). Ableist microaggressions and the mental health of disabled adults. *Community Mental Health Journal*, *56*(6), 1170–1179. https://doi.org/10.1007/s10597-020-00615-6

Kaufman, T. M. L., Baams, L., & Dubas, J. S. (2017). Microaggressions and depressive symptoms in sexual minority youth: The roles of rumination and social support. *Psychology of Sexual Orientation and Gender Diversity*, *4*(2), 184–192. https://doi.org/10.1037/sgd0000219

Keum, B. T., Brady, J. L., Sharma, R., Lu, Y., Kim, Y. H., & Thai, C. J. (2018). Gendered Racial Microaggressions Scale for Asian American Women: Development and initial validation. *Journal of Counseling Psychology*, *65*(5), 571–585. https://doi.org/10.1037/cou0000305

Kline, R. B. (2010). *Principles and practices of structural equation modeling* (3rd ed.). Guilford Press.

Koehle, J. S. (2017). *Anti-fat bias as a barrier to gender transition care* [Unpublished bachelor's thesis]. University of California. https://hankoehle.com/2020/08/29/anti-fat-bias-as-a-barrier-to-gender-transition-care/

Lee, E. J., Ditchman, N., Thomas, J., & Tsen, J. (2019). Microaggressions experienced by people with multiple sclerosis in the workplace: An exploratory study using Sue's taxonomy. *Rehabilitation Psychology*, *64*(2), 179–193. https://doi.org/10.1037/rep0000269

Lee, J. A., & Pausé, C. J. (2016). Stigma in practice: Barriers to health for fat women. *Frontiers in Psychology*, *7*, Article 2063. https://doi.org/10.3389/fpsyg.2016.02063

Lett, K., Tamaian, A., & Klest, B. (2020). Impact of ableist microaggressions on university students with self-identified disabilities. *Disability & Society*, *35*(9), 1441–1456. https://doi.org/10.1080/09687599.2019.1680344

Leung, C., Munro, L., Fox, R., Lindloff, M. R., & Meadows, A. (2024). *"Don't you want to look good?" #Fatmicroaggressions in everyday life.* [Manuscript in preparation]. Department of Psychology, University of Essex.

Lewis, J. A., & Neville, H. A. (2015). Construction and initial validation of the Gendered Racial Microaggressions Scale for Black women. *Journal of Counseling Psychology*, *62*(2), 289–302. https://doi.org/10.1037/cou0000062

Lewis, S., Thomas, S. L., Blood, R. W., Castle, D. J., Hyde, J., & Komesaroff, P. A. (2011). How do obese individuals perceive and respond to the different types of obesity stigma that they encounter in their daily lives? A qualitative study. *Social Science & Medicine*, *73*(9), 1349–1356. https://doi.org/10.1016/j.socscimed.2011.08.021

Lilienfeld, S. O. (2017). Microaggressions. *Perspectives on Psychological Science*, *12*(1), 138–169. https://doi.org/10.1177/1745691616659391

Linda, G. (2021, June 1). *Fategories—Understanding the fat spectrum: Fluffy Kitten Party*. https://fluffykittenparty.com/2021/06/01/fategories-understanding-smallfat-fragility-the-fat-spectrum/

Lindloff, M. R., & Meadows, A. (2023). Assessment of weight-related stigmatization. In A. Meule (Ed.), *Assessment of eating behavior: European Association of Psychological Assessment book series* (pp. 221–237). Hogrefe.

Lindloff, M. R., Meadows, A., & Calogero, R. M. (2023, November 6). *Development and Validation of Fat Microaggressions Scale*. https://doi.org/10.17605/OSF.IO/9NPG2

Lindloff, M. R., Meadows, A., & Calogero, R. M. (2024). *Reliable, relevant, and rigorous? A systematic review of self-report measures of weight stigma from 2012 to present* [Manuscript submitted for publication].

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Psychology Foundation.

Lui, P. P., & Quezada, L. (2019). Associations between microaggression and adjustment outcomes: A meta-analytic and narrative review. *Psychological Bulletin*, *145*(1), 45–78. https://doi.org/10.1037/bul0000172

Mann, T., Tomiyama, A. J., Westling, E., Lew, A.-M., Samuels, B., & Chatman, J. (2007). Medicare's search for effective obesity treatments: Diets are not the answer. *American Psychologist*, *62*(3), 220–233. https://doi.org/10.1037/0003-066X.62.3.220

McTernan, E. (2018). Microaggressions, equality, and social practices. *Journal of Political Philosophy*, *26*(3), 261–281. https://doi.org/10.1111/jopp.12150

Meadows, A., Barreto, M., Dovidio, J. F., Burke, S. E., Wittlin, N. M., Herrin, J., van Ryn, M., & Phelan, S. M. (2023). Signalling hostility: The relationship between witnessing weight-based discrimination in medical school and medical student wellbeing. *Journal of Applied Social Psychology*, *53*(3), 215–230. https://doi.org/10.1111/jasp.12847

Meadows, A., & Bombak, A. E. (2019). Yes, we can (no, you can't): Weight stigma, exercise self-efficacy, and active fat identity development. *Fat Studies: An Interdisciplinary Journal of Body Weight and Society*, *8*(2), 135–153. https://doi.org/10.1080/21604851.2019.1550303

Meadows, A., & Daníelsdóttir, S. (2016). What's in a word? On weight stigma and terminology. *Frontiers in Psychology*, *7*, Article 1527. https://doi.org/10.3389/fpsyg.2016.01527

Meadows, A., Daníelsdóttir, S., Goldberg, D., & Mercedes, M. (2020). Fighting for a (wide enough) seat at the table: Weight stigma in law and policy. *Fat Studies*, *10*(2), 101–124. https://doi.org/10.1080/21604851.2020.1835295

Meadows, A., & Higgs, S. (2019). The multifaceted nature of weight-related self-stigma: Validation of the Two-Factor Weight Bias Internalization Scale (WBIS-2F). *Frontiers in Psychology*, *10*, Article 808. https://doi.org/10.3389/fpsyg.2019.00808

Mensinger, J. L., Tylka, T. L., & Calamari, M. E. (2018). Mechanisms underlying weight status and healthcare avoidance in women: A study of weight stigma, body-related shame and guilt, and healthcare stress. *Body Image*, *25*, 139–147. https://doi.org/10.1016/j.bodyim.2018.03.001

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*(5), 674–697. https://doi.org/10.1037/0033-2909.129.5.674

Michaels, T. I., Gallagher, N., Crawford, M., Kanter, J. W., & Williams, M. T. (2018). Racial differences in the appraisal of microaggressions through cultural consensus modeling. *The Behavior Therapist*, *41*(7), 314–321.

Mollow, A. (2017). Unvictimizable: Toward a fat black disability studies. *African American Review*, *50*(2), 105–121. https://doi.org/10.1353/afa.2017.0016

Munro, L. (2017). Everyday indignities: Using the microaggressions framework to understand weight stigma. *The Journal of Law, Medicine & Ethics*, *45*(4), 502–509. https://doi.org/10.1177/1073110517750584

Myers, A., & Rosen, J. C. (1999). Obesity stigmatization and coping: Relation to mental health symptoms, body image, and self-esteem. *International Journal of Obesity*, *23*(3), 221–230. https://doi.org/10.1038/sj.ijo.0800765

Nadal, K. L. (2011). The Racial and Ethnic Microaggressions Scale (REMS): Construction, reliability, and validity. *Journal of Counseling Psychology*, *58*(4), 470–480. https://doi.org/10.1037/a0025193

Nadal, K. L. (2019). Measuring LGBTQ microaggressions: The Sexual Orientation Microaggressions Scale (SOMS) and the Gender Identity Microaggressions Scale (GIMS). *Journal of Homosexuality*, *66*(10), 1404–1414. https://doi.org/10.1080/00918369.2018.1542206

Nadal, K. L., Griffin, K. E., Hamit, S., Leon, J., Tobio, M., & Rivera, D. P. (2012). Subtle and overt forms of Islamophobia: Microaggressions toward Muslim Americans. *Journal of Muslim Mental Health*, *6*(2), 15–37. https://doi.org/10.3998/jmmh.10381607.0006.203

Nadal, K. L., Griffin, K. E., Wong, Y., Davidoff, K. C., & Davis, L. S. (2017). The injurious relationship between racial microaggressions and physical health: Implications for social work. *Journal of Ethnic & Cultural Diversity in Social Work*, *26*(1–2), 6–17. https://doi.org/10.1080/15313204.2016.1263813

Nadal, K. L., Whitman, C. N., Davis, L. S., Erazo, T., & Davidoff, K. C. (2016). Microaggressions toward lesbian, gay, bisexual, transgender, queer, and genderqueer people: A review of the literature. *Journal of Sex Research*, *53*(4–5), 488–508. https://doi.org/10.1080/00224499.2016.1142495

O'Brien, K. S., Latner, J. D., Puhl, R. M., Vartanian, L. R., Giles, C., Griva, K., & Carter, A. (2016). The relationship between weight stigma and eating behavior is explained by weight bias internalization and psychological distress. *Appetite*, *102*, 70–76. https://doi.org/10.1016/j.appet.2016.02.032

O'Hara, L., & Taylor, J. (2018). What's wrong with the 'War on Obesity?' A narrative review of the weight-centered health paradigm and development of the 3C framework to build critical competency for a paradigm shift. *SAGE Open*, *8*(2). https://doi.org/10.1177/2158244018772888

O'Keefe, V. M., Wingate, L. R., Cole, A. B., Hollingsworth, D. W., & Tucker, R. P. (2015). Seemingly harmless racial communications are not so harmless: Racial microaggressions lead to suicidal ideation by way of depression symptoms. *Suicide and Life-Threatening Behavior*, *45*(5), 567–576. https://doi.org/10.1111/sltb.12150

O'Neill, E. A., Trout, K., & Ramseyer Winter, V. (2023). Relationships between experiencing anti-fat microaggressions, body appreciation, and perceived physical and mental health. *Journal of Health Psychology*, *28*(2), 107–118. https://doi.org/10.1177/13591053221103421

Ong, A. D., Cerrada, C., Lee, R. A., & Williams, D. R. (2017). Stigma consciousness, racial microaggressions, and sleep disturbance among Asian Americans. *Asian American Journal of Psychology*, *8*(1), 72–81. https://doi.org/10.1037/aap0000062

Owen, L. (2012). Living fat in a thin-centric world: Effects of spatial discrimination on fat bodies and selves. *Feminism & Psychology*, *22*(3), 290–306. https://doi.org/10.1177/0959353512445360

Ozier, E. M., Jones Taylor, V., & Murphy, M. C. (2019). The cognitive effects of experiencing and observing subtle racial discrimination. *Journal of Social Issues*, *75*(4), 1087–1115. https://doi.org/10.1111/josi.12349

Papadopoulos, S., de la Piedad Garcia, X., & Brennan, L. (2021). Evaluation of the psychometric properties of self-reported weight stigma measures: A systematic literature review. *Obesity Reviews*, *22*(8), Article e13267. https://doi.org/10.1111/obr.13267

Paradies, Y., Ben, J., Denson, N., Elias, A., Priest, N., Pieterse, A., Gupta, A., Kelaher, M., & Gee, G. (2015). Racism as a determinant of health: A systematic review and meta-analysis. *PLOS ONE*, *10*(9), Article e0138511. https://doi.org/10.1371/journal.pone.0138511

Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, *135*(4), 531–554. https://doi.org/10.1037/a0016059

Pausé, C. (2014). Die another day: The obstacles facing fat people in accessing quality healthcare. *Narrative Inquiry in Bioethics*, *4*(2), 135–141. https://doi.org/10.1353/nib.2014.0039

Pearl, R. L., & Puhl, R. M. (2014). Measuring internalized weight attitudes across body weight categories: Validation of the modified weight bias internalization scale. *Body Image*, *11*(1), 89–92. https://doi.org/10.1016/j.bodyim.2013.09.005

Pérez Huber, L., & Solórzano, D. (2015). Racial microaggressions as a tool for critical race research. *Race, Ethnicity and Education*, *18*(3), 297–320. https://doi.org/10.1080/13613324.2014.994173

Peters, H. J., Schwenk, H. N., Ahlstrom, Z. R., & McIalwain, L. N. (2017). Microaggressions: The experience of individuals with mental illness. *Counselling Psychology Quarterly*, *30*(1), 86–112. https://doi.org/10.1080/09515070.2016.1164666

Pierce, C. M. (1970). Offensive mechanisms. In F. B. Barbour (Ed.), *The Black seventies* (pp. 265–282). Porter Sargent.

Pierce, C. M., Carew, J., Pierce-Gonzalez, D., & Willis, D. (1978). An experiment in racism: TV commercials. In C. Pierce (Ed.), *Television and education* (pp. 62–88). Sage Publications.

Platt, L. F., & Lenzen, A. L. (2013). Sexual orientation microaggressions and the experience of sexual minorities. *Journal of Homosexuality*, *60*(7), 1011–1034. https://doi.org/10.1080/00918369.2013.774878

Puhl, R. M., & Brownell, K. D. (2006). Confronting and coping with weight stigma: An investigation of overweight and obese adults. *Obesity*, *14*(10), 1802–1815. https://doi.org/10.1038/oby.2006.208

Puhl, R. M., & Heuer, C. A. (2009). The stigma of obesity: A review and update. *Obesity*, *17*(5), 941–964. https://doi.org/10.1038/oby.2008.636

Puhl, R. M., & Heuer, C. A. (2010). Obesity stigma: Important considerations for public health. *American Journal of Public Health*, *100*(6), 1019–1028. https://doi.org/10.2105/AJPH.2009.159491

Puhl, R. M., & King, K. M. (2013). Weight discrimination and bullying. *Best Practice & Research. Clinical Endocrinology & Metabolism*, *27*(2), 117–127. https://doi.org/10.1016/j.beem.2012.12.002

Qin, S., Nelson, L., McLeod, L., Eremenco, S., & Coons, S. J. (2019). Assessing test–retest reliability of patient-reported outcome measures using intraclass correlation coefficients: Recommendations for selecting and documenting the analytical formula. *Quality of Life Research*, *28*(4), 1029–1033. https://doi.org/10.1007/s11136-018-2076-0

Ragins, B. R., & Cornwell, J. M. (2001). Pink triangles: Antecedents and consequences of perceived workplace discrimination against gay and lesbian employees. *Journal of Applied Psychology*, *86*(6), 1244–1261. https://doi.org/10.1037/0021-9010.86.6.1244

Ravary, A., Baldwin, M. W., & Bartz, J. A. (2019). Shaping the body politic: Mass media fat shaming affects implicit anti-fat attitudes. *Personality and Social Psychology Bulletin*, *45*(11), 1580–1589. https://doi.org/10.1177/0146167219838550

Reiheld, A. (2020). Microaggressions as a disciplinary technique for fat and potentially fat bodies. In L. Freeman & J. Weekes-Schroer (Eds.), *Microaggressions and philosophy* (pp. 205–225). Routledge. https://doi.org/10.4324/9780429022470-10

Robinson, B. E., & Bacon, J. G. (1989). *The self-esteem/body image program* (Available from Beatrice "Bean" E. Robinson). University of Minnesota.

Robinson, B. E., & Bacon, J. G. (1996). The "If Only I Were Thin …" treatment program: Decreasing the stigmatizing effects of fatness. *Professional Psychology: Research and Practice*, *27*(2), 175–183. https://doi.org/10.1037/0735-7028.27.2.175

Robinson, J. L., & Rubin, L. J. (2016). Homonegative microaggressions and posttraumatic stress symptoms. *Journal of Gay & Lesbian Mental Health*, *20*(1), 57–69. https://doi.org/10.1080/19359705.2015.1066729

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press. https://doi.org/10.1515/9781400876136

Rosseel, Y. (2012). "lavaan: An R Package for Structural Equation Modeling." *Journal of Statistical Software*, *48*(2), 1–36. https://doi.org/10.18637/jss.v048.i02

Rothblum, E. D. (2018). Slim chance of permanent weight loss. *Archives of Scientific Psychology*, 6(1), 63–69. https://doi.org/10.1037/arc0000043

Sadika, B., Wiebe, E., Morrison, M. A., & Morrison, T. G. (2020). Intersectional microaggressions and social support for LGBTQ persons of color: A systematic review of the Canadian-based empirical literature. *Journal of GLBT Family Studies*, 16(2), 111–147. https://doi.org/10.1080/1550428X.2020.1724125

Sakaluk, J. K., & Short, S. D. (2017). A methodological review of exploratory factor analysis in sexuality research: Used practices, best practices, and data analysis resources. *Journal of Sex Research*, 54(1), 1–9. https://doi.org/10.1080/00224499.2015.1137538

Santos, I., Sniehotta, F. F., Marques, M. M., Carraça, E. V., & Teixeira, P. J. (2017). Prevalence of personal weight control attempts in adults: A systematic review and meta-analysis. *Obesity Reviews*, 18(1), 32–50. https://doi.org/10.1111/obr.12466

Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin*, 140(4), 921–948. https://doi.org/10.1037/a0035754

Schvey, N. A., Barmine, M., Bates, D., Oldham, K., Bakalar, J. L., Spieker, E., Maurer, D., Stice, E., Stephens, M., Tanofsky-Kraff, M., & Sbrocco, T. (2017). Weight stigma among active duty U.S. military personnel with overweight and obesity. *Stigma and Health*, 2(4), 281–291. https://doi.org/10.1037/sah0000057

Seacat, J. D., Dougal, S. C., & Roy, D. (2016). A daily diary assessment of female weight stigmatization. *Journal of Health Psychology*, 21(2), 228–240. https://doi.org/10.1177/1359105314525067

Seelman, K. L., Woodford, M. R., & Nicolazzo, Z. (2017). Victimization and microaggressions targeting LGBTQ college students: Gender identity as a moderator of psychological distress. *Journal of Ethnic & Cultural Diversity in Social Work*, 26(1–2), 112–125. https://doi.org/10.1080/15313204.2016.1263816

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, 7(4), 422–445. https://doi.org/10.1037/1082-989X.7.4.422

Sikorski, C., Luppa, M., Luck, T., & Riedel-Heller, S. G. (2015). Weight stigma "gets under the skin"-evidence for an adapted psychological mediation framework: A systematic review. *Obesity*, 23(2), 266–276. https://doi.org/10.1002/oby.20952

Silverschanz, P., Cortina, L. M., Konik, J., & Magley, V. J. (2008). Slurs, snubs, and queer jokes: Incidence and impact of heterosexist harassment in academia. *Sex Roles*, 58(3–4), 179–191. https://doi.org/10.1007/s11199-007-9329-7

Sinclair, S. J., Blais, M. A., Gansler, D. A., Sandberg, E., Bistis, K., & LoCicero, A. (2010). Psychometric properties of the Rosenberg Self-Esteem Scale: Overall and across demographic groups living within the United States. *Evaluation & the Health Professions*, 33(1), 56–80. https://doi.org/10.1177/0163278709356187

Sinclair, S. J., Siefert, C. J., Slavin-Mulford, J. M., Stein, M. B., Renna, M., & Blais, M. A. (2012). Psychometric evaluation and normative data for the depression, anxiety, and stress scales-21 (DASS-21) in a nonclinical sample of U.S. adults. *Evaluation & the Health Professions*, 35(3), 259–279. https://doi.org/10.1177/0163278711424282

Singh, R. S., Bhambhani, Y., Skinta, M. D., & Torres-Harding, S. R. (2021). Measurement of intersectional microaggressions: Conceptual barriers and recommendations. *Perspectives on Psychological Science*, 16(5), 956–971. https://doi.org/10.1177/1745691621991855

Solórzano, D., Ceja, M., & Yosso, T. (2000). Critical race theory, racial microaggressions, and campus racial climate: The experiences of African American college students. *The Journal of Negro Education*, 69(1/2), 60–73.

Spahlholz, J., Baer, N., König, H.-H., Riedel-Heller, S. G., & Luck-Sikorski, C. (2016). Obesity and discrimination—A systematic review and meta-analysis of observational studies. *Obesity Reviews*, 17(1), 43–55. https://doi.org/10.1111/obr.12343

Stack, L. (2018, January 8). *H&M apologizes for 'monkey' image featuring Black child*. The New York Times. https://www.nytimes.com/2018/01/08/business/hm-monkey.html

Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A. M. B., Nadal, K. L., & Esquilin, M. (2007). Racial microaggressions in everyday life: Implications for clinical practice. *American Psychologist*, 62(4), 271–286. https://doi.org/10.1037/0003-066X.62.4.271

Sumithran, P., & Proietto, J. (2013). The defence of body weight: A physiological basis for weight regain after weight loss. *Clinical Science*, 124(4), 231–241. https://doi.org/10.1042/CS20120223

Sutin, A. R., & Terracciano, A. (2017). Sources of weight discrimination and health. *Stigma and Health*, 2(1), 23–27. https://doi.org/10.1037/sah0000037

Tabachnick, B., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Pearson Education/Allyn and Bacon.

Tomiyama, A. J. (2014). Weight stigma is stressful. A review of evidence for the Cyclic Obesity/Weight-Based Stigma model. *Appetite*, 82, 8–15. https://doi.org/10.1016/j.appet.2014.06.108

Tomiyama, A. J. (2019). Stress and obesity. *Annual Review of Psychology*, 70(1), 703–718. https://doi.org/10.1146/annurev-psych-010418-102936

Torino, G. C., Rivera, D. P., Capodilupo, C. M., Nadal, K. L., & Sue, D. W. (2019). Everything you wanted to know about microaggressions but didn't get a chance to ask. In G. C. Torino, D. P. Rivera, C. M. Capodilupo, K. L. Nadal, & D. W. Sue (Eds.), *Microaggression theory: Influence and implications* (pp. 3–15). Wiley.

Torres-Harding, S. R., Andrade, A. L., Jr., & Romero Diaz, C. E. (2012). The Racial Microaggressions Scale (RMAS): A new scale to measure experiences of racial microaggressions in people of color. *Cultural Diversity and Ethnic Minority Psychology*, 18(2), 153–164. https://doi.org/10.1037/a0027658

Torrey, W. C., Mueser, K. T., McHugo, G. H., & Drake, R. E. (2000). Self-esteem as an outcome measure in studies of vocational rehabilitation for adults with severe mental illness. *Psychiatric Services*, 51(2), 229–233. https://doi.org/10.1176/appi.ps.51.2.229

Tylka, T. L., Annunziato, R. A., Burgard, D., Daníelsdóttir, S., Shuman, E., Davis, C., & Calogero, R. M. (2014). The weight-inclusive versus weight-normative approach to health: Evaluating the evidence for prioritizing well-being over weight loss. *Journal of Obesity*, 2014, Article 983495. https://doi.org/10.1155/2014/983495

Vadiveloo, M., & Mattei, J. (2017). Perceived weight discrimination and 10-year risk of allostatic load among US adults. *Annals of Behavioral Medicine*, 51(1), 94–104. https://doi.org/10.1007/s12160-016-9831-7

Vallejo, M. A., Vallejo-Slocker, L., Fernández-Abascal, E. G., & Mañanes, G. (2018). Determining factors for stress perception assessed with the Perceived Stress Scale (PSS–4) in Spanish and other European samples. *Frontiers in Psychology*, 9, Article 37. https://doi.org/10.3389/fpsyg.2018.00037

Vartanian, L. R. (2015). Development and validation of a brief version of the Stigmatizing Situations Inventory. *Obesity Science & Practice*, 1(2), 119–125. https://doi.org/10.1002/osp4.11

Vartanian, L. R., Pinkus, R. T., & Smyth, J. M. (2018). Experiences of weight stigma in everyday life: Implications for health motivation. *Stigma and Health*, 3(2), 85–92. https://doi.org/10.1037/sah0000077

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070. https://doi.org/10.1037/0022-3514.54.6.1063

Webb, J. B., Reeve, C. L., Etzel, L., Papay, K., Taylor, J. J., & Hardin, A. S. (2019). *The Weight-related Microaggression Experiences Questionnaire (WRMEQ): Item development and initial evaluation* [Poster presentation]. American Psychosomatic Society's 77th annual scientific meeting, Vancouver, BC, Canada. https://doi.org/10.13140/RG.2.2.30674.32966

West, K. (2019). Testing hypersensitive responses: Ethnic minorities are not more sensitive to microaggressions, they just experience them more frequently. *Personality and Social Psychology Bulletin*, *45*(11), 1619–1632. https://doi.org/10.1177/0146167219838790

Wike, T., Tomlinson, C. A., Wagaman, A., Matijczak, A., Murphy, J., Watts, K., O'Connor, K., & McDonald, S. (2023). The role of thwarted belongingness on the relationship between microaggressions and mental health for LGBTQ+ emerging adults. *Journal of Youth Studies*, *26*(2), 286–303. https://doi.org/10.1080/13676261.2021.2010687

Williams, D. R., Lawrence, J. A., Davis, B. A., & Vu, C. (2019). Understanding how discrimination can affect health. *Health Services Research*, *54*(Suppl. 2), 1374–1388. https://doi.org/10.1111/1475-6773.13222

Williams, M., & Halstead, M. (2019). Racial microaggressions as barriers to treatment in clinical care. *Directions in Psychiatry*, *39*(4), 265–280.

Williams, M. G., & Lewis, J. A. (2019). Gendered racial microaggressions and depressive symptoms among Black women: A moderated mediation model. *Psychology of Women Quarterly*, *43*(3), 368–380. https://doi.org/10.1177/0361684319832511

Williams, M. T. (2020). Microaggressions: Clarification, evidence, and impact. *Perspectives on Psychological Science*, *15*(1), 3–26. https://doi.org/10.1177/1745691619827499

Williams, M. T., Printz, D. M. B., & DeLapp, R. C. T. (2018). Assessing racial trauma with the Trauma Symptoms of Discrimination Scale. *Psychology of Violence*, *8*(6), 735–747. https://doi.org/10.1037/vio0000212

Wilson, B. D. M. (2009). Widening the dialogue to narrow the gap in health disparities: Approaches to fat Black lesbian and bisexual women's health promotion. In E. Rothblum & S. Solovay (Eds.), *The fat studies reader* (pp. 54–64). New York University Press.

Winberg, C., Coleman, T., Woodford, M. R., McKie, R. M., Travers, R., & Renn, K. A. (2019). Hearing "that's so gay" and "no homo" on campus and substance use among sexual minority college students. *Journal of Homosexuality*, *66*(10), 1472–1494. https://doi.org/10.1080/00918369.2018.1542208

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement*, *73*(6), 913–934. https://doi.org/10.1177/0013164413495237

Woodford, M. R., Chonody, J. M., Kulick, A., Brennan, D. J., & Renn, K. (2015). The LGBQ Microaggressions on Campus Scale: A scale development and validation study. *Journal of Homosexuality*, *62*(12), 1660–1687. https://doi.org/10.1080/00918369.2015.1078205

Wu, Y. K., & Berry, D. C. (2018). Impact of weight stigma on physiological and psychological health outcomes for overweight and obese adults: A systematic review. *Journal of Advanced Nursing*, *74*(5), 1030–1042. https://doi.org/10.1111/jan.13511

Zhu, X., Smith, R., & Buteau, E. (2022). A meta-analysis of weight *stigma and health* behaviors. *Stigma and Health*, *7*(1), 1–13. https://doi.org/10.1037/sah0000352

(*Appendix follows*)

Appendix

Fat Microaggressions Scale

The following questions ask you about a variety of weight-related experiences. Please indicate how often the following events have happened to you.

Note: We know that different people prefer to describe their weight in different ways. During this survey, some of the questions will use the term "fat" to describe higher weight individuals. This wording is not intended to cause offense and does not convey any judgment on the part of the researchers.

1. Medical staff make negative remarks, ridicule me, or call me names. (D)

2. I see fat people exploited for entertainment. (I)

3. When shopping, clothing in my size has fewer options than smaller sizes.* (C)

4. People have told me I need to go on a diet. (B)

5. Someone has posted something mean or embarrassing about my weight online. (D)

6. I hear fat jokes in television shows or films. (I)

7. Events that give all participants free t-shirts do not provide them in my size.* (C)

8. People have suggested that I exercise more to lose weight. (B)

9. People give me disgusted looks in a grocery store or restaurant. (D)

10. I see fat characters being portrayed as a target of pity. (I)

11. When shopping, clothing in my size is more expensive than smaller sizes.* (C)

12. People insisted their "concern for my health" is not fat shaming. (B)

13. People stare or give me dirty looks in the gym. (D)

14. I see fat characters being portrayed as unlovable. (I)

15. When shopping, stores that advertise "inclusive" sizing do not carry my size.* (C)

16. People have told me I will get diabetes or other health issues if I do not lose weight. (B)

17. I am not able to fit into seats at restaurants, theaters, or other public places. (D)

18. I see people post comments on photos of fat people that they are "promoting obesity." (I)

19. When shopping, clothing that said "one size fits all" has not fit me.* (C)

20. People give me unsolicited tips about weight loss. (B)

21. People stared or laughed at me at the beach or pool. (D)

22. I see fat characters being portrayed as unintelligent. (I)

23. I am not able to find clothes that fit.* (C)

24. I have been told "all you really need is a little willpower." (B)

25. People have acted surprised that I have a romantic partner. (D)

26. I see online comments fat shaming people. (I)

27. People said, "good for you!" after seeing me exercise. (B)

28. I am not able to comfortably fit through aisles or turnstiles. (D)

29. I overheard someone say they "feel" fat. (I)

30. People have told me that I look much better after I have lost weight. (B)

31. People act as if they are afraid of me. (D)

32. People make fun of other fat people in front of me. (I)

33. People have made unsolicited comments on what I am eating. (B)

34. I am excluded from social groups or activities because of my weight. (D)

35. I see news headlines warning about the dangers of fatness. (I)

36. People who are not health professionals ask me about my blood sugar, cholesterol, etc. (B)

37. I have overheard other people making rude remarks about my weight in public. (D)

38. I have heard someone make disparaging comments like "no one wants to see that" when a fat person is wearing revealing clothing. (I)

39. I see posters near elevators with images or slogans such as "be fit, not fat," shaming me for not taking the stairs. (B)

40. My thin friend called themselves fat in front of me. (I)

Note: D = Direct Experiences subscale, I = Indirect Experiences subscale, C = Clothing Exclusion subscale, B = Benevolent Weightism subscale. Items are rated: 1 (never), 2 (rarely), 3 (sometimes), 4 (often), and 5 (most days). Starred items are rated on the same scale, except for 5 (usually). Total scores are obtained by averaging responses.