8-23-2022 10:00 AM

Development and Validation of the Fat Microaggressions Scale

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A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Psychology

Abstract

Much of the discrimination that higher-weight people face takes the form of microaggressions, which have yet to be quantitatively measured. Across five studies, I describe the development and validation of the Fat Microaggressions Scale (FMS). In Study 1, I created the initial item pool through examining previously published measures of experienced weight stigma, qualitative studies, and tweets using the #FatMicroaggressions hashtag. In Study 2, I conducted a Delphi review with fat activists and scholars to receive feedback on the scale. In Study 3, I provided initial evidence for a four-factor structure of the FMS through an exploratory factor analysis. In Study 4, I provided additional evidence of the scale's structure through a confirmatory factor analysis, and construct validity. In Study 5, I further examined the scale's validity and test-retest reliability. Together, this series of studies provided evidence for a new measure to further advance the study of weight stigma in the form of fat microaggressions.

Keywords

Fat microaggressions, weight stigma, scale development, construct validation

Summary for Lay Audience

Higher-weight people are targets of discrimination because of their weight. This discrimination often takes the form of microaggressions, or everyday interactions, such as unsolicited comments on what someone is eating or fat jokes in the media. Research on other areas of microaggressions has demonstrated their harmful psychological, physiological, and behavioral effects. To investigate the effects of microaggressions towards higher-weight people, or fat microaggressions, we need a way to quantitatively measure them. This research describes the development and validation of the Fat Microaggressions Scale (FMS) through five studies. These studies demonstrated that the FMS is a reliable and valid instrument for research on weight prejudice and discrimination. The resulting scale will allow fat microaggression research to further progress and better understand the impact of fat microaggressions on higher-weight people.

Acknowledgements

This thesis would not have been possible without the help and support of many people. I would first like to thank my supervisor, Dr. Rachel Calogero. I greatly appreciate your guidance, encouragement, and compassion. I would also like to thank my co-supervisor, Dr. Angela Meadows, for helping to guide me into graduate school and research during a time when nothing felt very normal. I have grown immensely and gained confidence as a researcher and scholar because of both of you.

I would also like to thank my undergraduate advisors, Dr. Gregory Robinson-Riegler and Dr. Sarah Hankerson. I would not have developed an interest in psychology research and decided to go to graduate school without their guidance, support, and the opportunities they gave me.

I am thankful for my cohort for ensuring we were not alone despite the circumstances in which we began graduate school together, and I am looking forward to continuing to do so the next couple of years. Thank you to my friends, both close and far away, who have been there for me and always make me laugh.

Finally, I am extremely grateful to my parents and brother. I wouldn't have made it here without their love and support.

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Chapter 1

1 Introduction

First described in the context of Black-White racial discrimination (Pierce, 1970; Pierce et al., 1978), and later expanded to include the experiences of other racial minority members (Sue et al., 2007), the concept of microaggressions has garnered increased scholarly attention over the last decade. Drawing from current scholarship on microaggressions and everyday discrimination (Sue et al., 2007; Williams, 2020), microaggressions are subtle, deniable, everyday acts and exchanges that demean the target based on their membership in a stigmatized group and serve to "reinforce pathological stereotypes and inequitable social norms" (Williams, 2020, p. 4). While the concept of microaggressions and the scientific rigor underlying it have been critiqued (Lilienfeld, 2017), there is ample empirical evidence to confirm that microaggressions are real, well-defined experiences that can be assessed reliably via individuals' subjective reports (Williams, 2020).

Though racial microaggressions have received the most scholarly attention (Lui & Quezada, 2019), studies have documented frequent experiences of microaggressions on the basis of gender identity (Chang & Chung, 2015; Nadal et al., 2016), sexual identity (Nadal et al., 2016), social class (L. Smith et al., 2016), ability status (Conover et al., 2017; Lee et al., 2019), mental health status (Barber et al., 2020), religion (Nadal et al., 2012), immigrant status (Nienhusser et al., 2016), and weight (Akoury et al., 2019). Furthermore, as individuals belong to more than one group, some research has examined microaggressions based on intersectional identities, including Black women (Williams & Lewis, 2019), sexual minorities with physical disabilities (Conover & Israel, 2019), and sexual minority men of color (Bowleg, 2013; Follins, 2014).

An extensive literature has also linked microaggressions to a multitude of negative health consequences for targets (Earnshaw et al., 2016; Hollingsworth et al., 2017; Williams et al., 2018), and these effects are cumulative (W. Smith et al., 2016; Solórzano et al., 2000). African American students on a college campus have described their experiences with racial microaggressions as draining, frustrating, and feeling helpless (Solórzano et al., 2000). Other 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), and physical health problems, such as higher levels of pain and fatigue (Nadal et al., 2017). Studies have also linked LGBTQ microaggressions to lower self-esteem (Seelman et al., 2016), higher stress and anxiety, (Seelman et al., 2016) and depressive symptoms (Kaufman & Baams, 2017; Woodford et al., 2015). Overall, despite appearing innocuous to some, microaggressions have reliably been associated with negative mental and physical health consequences across numerous stigmatized groups.

1.2 Forms of Microaggressions

Microaggressions can take several different forms. According to Sue's (2007) framework, microaggressions may be categorized as microassaults, microinsults, or microinvalidations, and within these categories they may be further categorized as verbal, behavioral, or environmental (see Table 1). Across these various forms, what makes microaggressions particularly insidious is that they are often hidden or disguised, making them difficult to confront, and easy for the perpetrator to deny. They are also often unintentional, further ridding the perpetrator of any responsibility, and creating defensive or angry feelings if confronted. These characteristics create multiple dilemmas for the target of the microaggression in terms of interpreting and responding to these experiences (Sue et al., 2007).

Microassaults are comparable to what we think of as "old fashioned" discrimination. For the perpetrator, these are blatant, typically purposeful actions, often with the intent to harm the target because of their stigmatized identity (Sue et al., 2007). These can take shape as verbal communications, such as name-calling or racial slurs (Sue et al., 2007), or behaviors, such as not wanting to sit next to a Muslim on a plane (Torino et al., 2019a). They may also be environmental, such as the display of a swastika (Sue et al., 2007). Although there is some discussion on whether microassaults should even be categorized as microaggressions, due to their more blatant nature, it is important to note that Chester Pierce intended the "micro" to reflect that these are every day and commonplace occurrences and not that they are less harmful (Torino et al., 2019a). Furthermore, microassaults can be separated from other acts of discrimination, such as hate crimes, which are illegal, typically violent, and often intended to cause physical harm (Torino et al., 2019a).

Microinsults are communications that contain rude or insulting messages about a stigmatized person's identity. Unlike microassaults, which are typically conscious and intentional, microinsults are often unintentional by the perpetrator, but nevertheless are recognizable by the target (Sue et al., 2007). Microinsults often take the form of comments intended to be jokes or other insensitive remarks but can also be behavioral. For example, an employee following a Black person around a store is a behavior that sends the message that Black people are criminals (Bryant-Davis, 2019). An example of a verbal microinsult might be telling a Brown person in a discussion about racial discrimination in employment, "I believe the most qualified candidate should get the job," which implies that they are given unfair benefits or not as competent as White people (Sue et al., 2007). In 2018, the clothing company H&M posted images of a Black child modeling a sweatshirt labelling him a "monkey" while White children

modelled the other items in the collection, leading to backlash against this environmental microinsult due to the word's historical usage as a racial slur (Stack, 2018).

Microinvalidations seek to invalidate or negate the feelings and experiences of a member of a stigmatized group (Sue et al., 2007). When someone declares "I don't see color" to a Black person, their statement negates that person's racial experiences (Sue et al., 2007). Color blind attitudes, proclamations that a person is being "too sensitive" when discussing an experience where they were discriminated against, or denial that the discrimination even occurred all fall under the category of microinvalidations (Sue et al., 2007). Similar to microinsults, the perpetrator is often unaware of the implications of their comments, and the comments may sometimes even come from well-intentioned individuals. An example of an environmental microinvalidation might be if a Brown person attends university and finds that all of the university buildings are named after White people, sending the message that they do not belong or will not succeed (Sue et al., 2007).

Table 1.

Categorization of Microaggressions

	Definition	Examples
Microassault	A "verbal or nonverbal attack meant to hurt the intended victim through name-calling, avoidant behavior, or purposeful discriminatory actions" (Sue et al., 2007).	• Requesting to not sit next to a Muslim on an airplane (Torino et al., 2019a) • Saying "That's so gay," to imply something is bad (Nadal, et al., 2016)
Microinsult	"Communications that convey rudeness and insensitivity and demean a person's identity" (Sue et al., 2007).	• Telling a person of color, "I believe the most qualified candidate should get the job" (Sue et al., 2007) • Making a joke that gay men are too feminine to enjoy sports (Nadal et al., 2016)

Microinvalidation	"Communications that exclude, negate, or nullify the psychological thoughts, feelings or experiential reality of a person" (Sue et al., 2007).	• Saying "I don't see color" to a Black person (Sue et al., 2007) • Telling an LGBTQ person that their perceptions of discrimination are unfounded (Nadal et al., 2016)
Verbal	Spoken or written comments (Torino et al., 2019b)	• Asking an Asian American or Latino, "Where are you from?" (Sue et al., 2007) • Calling someone by their incorrect gender pronouns (Nadal et al., 2016)
Behavioral	Non-verbal behaviors, such as facial, tonal, or gestural actions (Torino et al., 2019b)	• A White woman clutching her purse as a Black man passes by (Sue et al., 2007 • Someone acting uncomfortable or looking uneasy when they see public displays of affection among LGBTQ couples (Nadal et al., 2016)
Environmental	Microassaults, insults, and invalidations which are manifested on systemic and environmental levels (Torino et al., 2019b)	• University buildings only being named after White people (Sue et al., 2007 • Lack of gender nonbinary restrooms (Torino et al., 2019b)

1.3 Weight Stigma

While most are aware of the existence of racism, weight stigma represents an area of prejudice that hasn't been as commonly studied by stigma researchers. Despite this, it is not a new phenomenon. The stigmatization of fat people has been written about as early as the 1960's (Allon, 1973; Canning & Mayer, 1966); while the National Association to Advance Fat Acceptance was founded in 1969 with the aim to end prejudice and discrimination against fat people (National Association to Advance Fat Acceptance, 2020). However, the field has taken off particularly in the last 15 years. Anecdotal, observational, and empirical evidence has documented the frequency and severity of weight stigma encountered by higher-weight individuals, often driven by negative stereotypes that depict higher-weight people as lazy, ugly,

stupid, or lacking self-discipline and self-control (Puhl & Brownell, 2006; Puhl & Heuer, 2009). Weight stigma is pervasive, and comes from a variety of sources, including friends and family, health care providers, coworkers, strangers, and the media (Puhl & Heuer, 2009). Furthermore, there are few areas left untouched by weight stigma, and it occurs across many life domains, including relationships, work, school, healthcare, therapy, military, and the criminal justice system (Meadows et al., 2020; Puhl & King, 2013; Schvey et al., 2017). Anti-fat attitudes have been observed even in preschool-aged children (Cramer & Steinwert, 1998), and negative stereotypes of higher-weight people are rarely challenged (Puhl & Heuer, 2009). One qualitative study reported that women described weight stigmatization as "everywhere" and "unavoidable," but they very rarely challenged their experiences of stigma, and often believed that they deserved their prejudicial treatment (Lewis et al., 2011).

Like other forms of prejudice, weight stigma is connected to a host of negative health consequences. A plethora of evidence suggests that the relationship between weight and health has been exaggerated (Klein et al., 2004; Tomiyama et al., 2016); however, because of the widely held perception that higher weight equates to poorer health, perpetrators of weight stigma appear to be well-intentioned and merely reflect concerns about the target's health. Indeed, some public health campaigns advocate for the stigmatization of fat individuals, based on the mistaken beliefs that (a) shaming fat people will motivate them to lose weight, and (b) weight loss results in better health (Hunger et al., 2020). The empirical evidence, however, suggests this is not the case. Weight stigma has been linked to a host of detrimental psychological consequences, including depression, anxiety, negative self-esteem, and body image dissatisfaction (Puhl & Heuer, 2009; Wu & Berry, 2018), as well as feelings of social isolation, rejection, and shame (Lewis et al., 2011). Behaviorally, people who are stigmatized for their weight are more likely to

engage in disordered eating such as binge eating or skipping meals (Hunger & Tomiyama, 2018), self-social isolation (Lewis et al., 2011), and reduced participation in physical activity (Meadows & Bombak, 2019). The physical consequences of weight stigma include physiological stress, such as increased heart rate, blood pressure, and levels of cortisol (Hunger et al., 2015), as well as an increased risk of diabetes (Wu & Berry, 2018). Tomiyama (2019) proposed a feedback loop whereby weight stigma induces a stress response, activating various cognitive, behavioral, physiological, and biochemical pathways in the body. These pathways interact in ways that ultimately, and perhaps ironically, cause weight gain. Importantly, it is not just the singular experience of weight discrimination that induces stress, but the regularity and acceptability of weight stigma in everyday life that leads to higher weight itself being a stressful state (Tomiyama, 2019).

1.4 Fat Microaggressions

One area of weight stigma and microaggression research that warrants attention is that of fat microaggressions, which directly target higher-weight individuals, and for which there is little research. Munro (2017) notes that while there is a robust literature on weight stigma and discrimination, there is a dearth of research explicitly focused on fat microaggressions, calling for the microaggressions framework to be applied in this domain. A few qualitative studies have explicitly examined experiences of fat microaggressions in specific contexts. Akoury et al. (2019) looked at fat women's experiences in therapy, while another study interviewed higher-weight individuals employed in higher education on their encounters with microaggressions (Hunt & Rhodes, 2018). Another examined fat people's experiences with environmental microaggressions, such as public seating that is too small or limited clothing options (Owen, 2012). Collectively, these studies have revealed that environmental microaggressions are some

of the most frequently encountered fat microaggressions (Akoury et al., 2019; Hunt & Rhodes, 2018; Owen, 2012). These experiences carry the painful daily reminder for higher-weight individuals that this world was not built for them, leading to feelings of embarrassment, isolation, and constant vigilance of the space they take up, and others' awareness of it (Owen, 2012). As one woman noted, the totality of fat microaggressions makes even the simple act of grocery shopping an "exercise in courage" (Owen, 2012, p. 297). Other qualitative and quantitative studies have touched on fat microaggressions without explicitly labelling them as such. Using a daily diary study, higher-weight women reported that on average, they experienced around three stigmatizing events every day (Seacat et al., 2016). Puhl and Brownell (2006) assessed weight stigma quantitatively using the Stigmatizing Situations Inventory (SSI; Myers & Rosen, 1999), finding that some of the most frequent instances of stigmatization were negative assumptions from others, comments from children and healthcare providers, and environmental barriers, many of which constitute microaggressions. However, the SSI is over 20 years old and outdated, and was not intended to measure microaggressions, thus not adequately capturing fat people's modern-day experiences of fat microaggressions.

1.5 Measuring Fat Microaggressions

Though often not labelled as such in the literature, many everyday experiences of weight stigmatization may qualify as microaggressions. To systematically assess and examine the role of fat microaggressions in people's lives, and as a form of weight stigma, we need a validated measure of the construct. Well-developed scales with good psychometric properties exist for measuring racial microaggressions (Nadal, 2011; Williams, 2020) and LGBTQ microaggressions (Nadal, 2019), but no validated scale exists to measure fat microaggressions. One dissertation specifically looked at fat microaggressions in healthcare using an adapted racial microaggression

scale (Bauman, 2020). However, the assumption that racial microaggressions capture the microaggressive experiences of higher-weight patients is problematic because the experiences of different stigmatized groups are rooted in a history of discrimination that is unique to their group and manifests differently toward their group. Other studies of weight discrimination have used weight stigma scales or items developed for a single study, but none of these scales explicitly aimed to measure fat microaggressions. These scales also tend to be adapted versions of scales developed to assess racial or general discrimination or have simply not been validated. Further, many weight stigma studies have asked participants only broad questions on discrimination and not weight-based discrimination specifically, which may affect what types of experiences are recognized and recalled by participants. Due to internalized weight stigma, many won't recognize their experiences as stigmatizing, or label them as discrimination. Additionally, while microaggressions make up most discriminatory experiences, people may only be able to recall the most salient of them, highlighting the need for a scale that includes items that refer to specific instances and situations of discrimination.

A particular challenge presented for developing a fat microaggressions scale is how to categorize the different types of fat microaggressive encounters to represent a full spectrum of unique experiences. As described earlier, microaggressions may be broadly categorized as microassaults, microinsults, and microinvalidations and within each of these categories includes verbal, behavioral, and environmental forms (Sue et al., 2007). However, microaggression scales designed to assess the experiences of specific stigmatized groups have not relied solely on these categories. For example, the Racial and Ethnic Microaggressions Scale includes six dimensions: (a) assumptions of inferiority, (b) treatment as second-class citizens and assumptions of criminality, (c) microinvalidations, (d) exoticization or assumptions of similarity, (e)

environmental microaggressions, and (f) workplace and school microaggressions (Nadal, 2011). The LGBTQ Microaggressions Scale includes five dimensions: (a) microinvalidations, (b) assumption of pathology, (c) heterosexist language, (d) enforcement of binary gender roles, and (e) environmental microaggressions (Nadal, 2019). These categories partially represent the categories introduced by Sue et al. (2007), but also highlight the need for the creation of other categories based on the unique experiences of a particular group. For example, Reiheld (2020) identified three forms of verbal fat microaggressions encountered by higher-weight individuals: (a) backhanded compliments, (b) weight-loss encouragement, and (c) concern trolling (reminding someone their body size is unacceptable, under the guise that they are concerned for that person's health), which would not be as directly applicable for the study of racial or LGBTQ microaggressions. The microaggressions experienced by individuals who are stigmatized because of their weight represent unique forms of discrimination that will also likely require unique categories of microaggressions to represent them.

1.6 Overview and Hypotheses

Research on weight stigma has yet to directly take up the microaggression framework, but it provides the ideal structure to capture the everyday discrimination experiences of higher-weight individuals. Several measures exist to assess experienced and internalized weight stigma, but none of these measures assess the experience of fat microaggressions and suffer from critical limitations. The aim of my master's thesis is to develop and test a new measure of fat microaggressions for quantitative research.

Chapter 2

2 Study One – Item Generation

The objective of Study One was to develop a set of potential scale items. These items came from three sources: (a) existing measures that have been used to assess experiences with weight stigma, (b) qualitative studies that report on fat microaggressions, and (c) tweets that have used the #FatMicroaggressions hashtag on Twitter.

2.1 Method

To begin the compilation of the potential item list, I first created an exhaustive list of items from weight stigma scales included in a systematic review of weight stigma measures by DePierre and Puhl (2012). I then reviewed the literature for any additional weight stigma measures published since 2012 that were not included in the above-mentioned review. Between October 2020 and May 2021, I conducted a search using the research databases Web of Science, PsycInfo, and PubMed. To identify measurement tools related to weight stigma, and applying the same search terms as DePierre and Puhl (2012), the key search terms *weight*, *body weight*, *obesity*, *overweight*, and *fat*, were combined with *stigma*, *bias*, *prejudice*, *teasing*, *bullying*, *discrimination*, *victimization*, *stereotype*, and further combined with *assessment*, *scale*, *measure*, *instrument*, *inventory*, *survey*, *meta-analysis*, and *psychometric*. Second, I reviewed three qualitative studies that specifically investigated fat microaggressive experiences and developed scale items to capture them. Third, I reviewed tweets that have used the #FatMicroaggressions hashtag on Twitter, which was also the basis for an undergraduate honors thesis project in our lab. This hashtag was created by blogger Melissa McEwan in late 2013, and it inspired thousands of people to share their experiences of fat microaggressions (Munro, 2017).

2.2 Results and Discussion

The compilation of the 18 weight stigma scales included in the systematic review of weight stigma measures by DePierre and Puhl (2012) resulted in a total of 177 items. My updated literature review identified 18 additional scales and 214 additional items (see Table 2 in Appendix A). The review of the qualitative studies that specifically investigated fat microaggressive experiences resulted in an additional 23 unique items (see Table 3). The review of the #FatMicroaggressions on Twitter identified a total of 6,512 tweets generated between December 11, 2013 and October 13, 2020. After excluding retweets and tweets that did not constitute microaggressions, the final pool consisted of 1,324 tweets, that were used to develop an additional 95 items.

Table 3.

Items Identified from Qualitative Studies

Author / Year	Sample	Number of Items Pulled	Sample Item
Akoury et al., 2019	Sample of higher-weight women in therapy; N = 15; age: M = 49; predominantly European American; BMI: M = 41.52	5	Therapist assumed their patient only ate "junk food" or sat in bed all day
Hunt & Rhodes, 2017	Sample of employees in higher education in the United States; N = 13; 85% female; 46% White; 38% gay or lesbian	10	Supervisor gave employee a weight loss book, even after employee had told supervisor they did not want to lose weight
Owen, 2012	Sample of higher-weight individuals; N = 77; 78% female	8	Hospital gowns, blood pressure cuffs, MRIs, life jackets, seatbelts and other health or safety devices do not fit higher-weight individuals

In total, 509 items comprised the initial starting point for the fat microaggressions scale. The items from these scales were independently reviewed and coded by two research assistants and me to determine whether the item did or did not represent a microaggression, and, if so, to code it as either a microassault, microinsult, or microinvalidation, and as either verbal, behavioral, or environmental. These categories were initially defined by Sue et al. (2007) in reference to racial microaggressions. After the coding process, it became clear that these categories did not provide a framework easily applicable to the experiences of fat microaggressions. Thus, I turned to the content analysis of the #FatMicroaggressions tweets to identify 14 new categories of fat microaggressions (see Table 4): Assumptions, Concern Trolling, Desirability, Devaluation, Diet and Fitness, Employment, Environmental, Fat Talk, Fashion, Health, Humor, Media, Public Property, and Research). All 509 scale items were then again reviewed and coded according to these categories.

Table 4.

Fat Microaggression Categories

Category	Definition	Example Tweets
Assumptions	Assumptions made about individuals of higher weight	• "'It's not that you're fat, it's just that you're clearly lazy, and I can't stand laziness'" • "The assumption that I don't exercise, am not fit, can't cook from scratch, etc"
Concern trolling	Fatphobic comments that were justified or accompanied by claims of concern for an individual's health (e.g., "It's not because fat is unattractive, it's your HEALTH I'm concerned about")	• "'Are you keeping track of your cholesterol and blood sugar? I'm just concerned'" • "'I just want you to be healthy'"
Desirability	Comments or actions that imply that one needs to be thin to be	• "Being 15 and being told that no one would love me if I didn't

	desirable or fetishize fat bodies (e.g., the term 'chubby chaser')	lose weight" • "Men walking up towards me singing 'big girls you are beautiful'"
Devaluation	Comments or actions suggesting that an individual of higher weight is less than or a work in progress	• "Mom: none of your friends will ever want you as a bridesmaid unless you lose weight. Think about the photos • "When the cashier at the store socializes with a thin customer, then the overweight person is greeted with silence"
Diet and fitness	Comments about eating habits, diets, exercise, and using higher-weight individuals as a source of motivation for someone else to lose weight	• "You should really try Paleo • "Being shamed for not going to the gym, then being looked at like an alien when you do"
Employment	Weight-based microaggressions that occur in workplace settings (e.g., at one's place of work or a job interview)	• "When the same shirt with the same boob coverage as your thinner, flatter coworker becomes inappropriate office attire" • "'I would never hire someone overweight' said the hiring manager"
Environmental	Physical obstacles or barriers within public settings	• "Airplane seats, stadium seats, bus seats, all too small"
Fat talk	People who speak negatively about their own body size or shape using words such as fat	• "'Ugh. They are trying to make us fat!' (referencing an office gift basket of cookies)" • "'OMG this top makes me look FAT!'"
Fashion	Fat microaggressions concerning clothing, such as charging more for plus-sized clothing or always having plus-sized clothing in the dark back corner of a store	• "'We don't cater to… larger women' said the saleswoman to me at Victoria's Secret" • "Paying twice as much for only a handful of options for clothing"

Health	Comments or actions concerning a higher-weight individual's health, which includes blaming unrelated health issues on weight, presuming that an individual of higher weight has a particular health condition, or comments relating to public health	• "Your [insert any disease here] would get better if you lost weight" • "Doctor says Rx's cognitive side effects don't matter because it MIGHT make me lose weight"
Humor	Higher-weight individuals being mocked or used as the target for offensive jokes	• "'Your mum's so fat...' jokes" • "When your thin friends make fun of fat people in front of you"
Media	Fat microaggressions on television, social media, or advertisements, such as stereotyping higher-weight characters they were categorized as media	• "When the only commercials you see with fat people in them are about weight loss" • "Having fat characters on show as the comic relief/butt of jokes instead of normalized main characters"
Public property	Strangers observing, judging, or commenting on higher-weight individuals as if they were public property	• "Disgusted looks from other diners when I'm at a restaurant eating anything at all • "Strangers giving you unsolicited weight-loss and diet tips"
Research	Comments or actions involving research of higher-weight individuals (e.g., being told that research investigating weight stigma is not valid or health research only being taken seriously when it is tied to obesity)	• "You study prejudice towards fat people? Do you think that is valid research? • "Public health research and policy not getting any traction unless it's part of THE WAR ON OBESITY"

Once all items had been categorized, they were reviewed again for relevance and redundancy to determine items for elimination from this initial large pool of items. Items were selected to ensure a wide range of experiences were covered and included in the scale. To ensure

representation across dimensions, I aimed to have at least 10 items for each category and the number of items varied across the categories. For example, the Diet and Fitness category contained 21 items, while the Fat Talk category had 10 items. Among this initial item pool, 84 items originated from other measures of weight stigma, 95 items from tweets, 6 items from qualitative experiences, and 10 items from additional suggestions by the research team, resulting in a total of 197 items.

Chapter 3

3 Study Two – Expert Review

The second phase of this research applied the Delphi method to gain consensus on the item pool by a panel of experts. The expert panel members were comprised of fat people with lived experiences, including fat activists, social influencers, and weight stigma researchers. I planned to conduct two rounds of review and use the feedback from the expert panel to revise, add, and/or delete items. The final set of items would comprise the first iteration of the Fat Microaggressions Scale (FMS) to be subjected to analysis.

3.1 Method

Expert reviewers were identified from several sources, including previous presenters from the International Weight Stigma Conference, fat activists on Twitter, speakers from the National Association to Advance Acceptance (NAAFA), presenters from the Braving Body Shame Conference presenters, and other fat activist writers and artists. Expert reviewers were intentionally recruited to ensure diversity across racial, gender, sexual, and body size identities. A total of twenty-four people were invited to participate via email, and provided details about the project, what I will be asking them to complete, and information of compensation. Ten people agreed to be a member of the expert panel. The expert reviewers were informed that their participation would consist of two rounds of feedback, but if they could only do one, that was also appreciated. All surveys would be hosted on the Qualtrics platform and completed online. They were asked to complete the survey within two weeks and told they would be reimbursed $20 CAD for the first round and $15 CAD for the second round.

Once consent was obtained at the start of the survey, the experts were presented with each individual item grouped by main category. For each category, they were provided with a

definition of that category, followed by the items. For each item, they were asked to rate how important that item would be for a measure of fat microaggressions, using a Likert-type response scale ranging from 1 (*Do not include*), 2 (*Unimportant*), 3 (*Don't know/depends*), 4 (*Important*), to 5 (*Essential*). For each item, they also had the opportunity to provide comments or suggestions to improve the item wording. After all items were reviewed in a category, they were asked to select the three most important items from that category and could suggest additional items. At the end of the survey, they were asked if they would like to be acknowledged in any future publications of this work. All 10 experts completed the first round of the online survey.

3.2 Results and Discussion

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. Based on the ratings and feedback, each item was carefully reviewed to either retain, remove, or modify. First, items that had at least one "Do not include" rating were removed (n = 7). Reasons given by the panel members for not including an item were that the item overlapped too closely with another item, the experience described in the item was too specific and not common enough, or the item was not fat specific. Next, although no reviewers gave these items a "Do not include" rating, some 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 some reviewer comments and the input of the research team, the entire "Research" category (n = 9) was removed, as it was deemed unlikely to be relevant to most people, leaving 13 categories to represent the items. After these revisions, 164 items remained. Thirteen items were then added (with minor wording modifications) based on suggestions from the reviewers. Due to a high endorsement rate of most items, I decided it would

not be productive to conduct a second round of review. Thus, the preliminary version of the Fat Microaggressions Scale consisted of 177 items that would be subjected to a rigorous program of construct validation.

Chapter 4

4 Study Three – Exploratory Factor Analysis

Study Three aimed to determine the factor structure of the scale in a sample of higher-weight adults. I also aimed to reduce the number of items to create a measure that could be administered in a reasonable length of time.

4.1 Method

4.1.2 Participants

Participants included in this study were higher-weight individuals residing in either Canada or the United Kingdom and recruited via Prolific. Prolific is an online research platform that provides access to a high-quality participant pool that allows for pre-screening at the recruitment stage to meet the inclusion criteria for a study. Prolific has been found to have a higher data quality compared to other online research platforms, such as MTurk (Eyal et al., 2021). A total of 343 participants (M_{age} = 35.88, *SD* = 12.04) participated in this study. The sample was comprised of 48.7% men (*n* = 167), 46.9% women, (*n* =161), and 2% non-binary (*n* = 7) individuals. Eight (2.3%) participants preferred not to disclose their gender identity. For race/ethnicity, 30% (*n* = 103) participants identified as Asian, 29% (*n* = 98) as White, 25% (*n* = 85) as Black, 13% (*n* = 46) as multiracial, 2% (*n* = 6) as Latin/Hispanic, and 1% (*n* = 3) as Indigenous. Two participants did not disclose their race/ethnicity. Most of the sample identified as straight (78.7%, *n* = 270), followed by bisexual (8.5%, *n* = 29), asexual (2.9%, *n* = 10), lesbian/gay (3.5%, *n* = 12), queer, (2%, *n* = 7) pansexual (0.6%, *n* =2), demisexual (0.3%, *n* = 1), and heteroflexible (0.3%, *n* = 1). Eleven (2.6%) participants preferred not to disclose their sexual identity. In regard to socioeconomic status, 5.8% (*n* = 20) of participants described themselves as lower class, 32.1% (*n* = 110) working class, 22.4% (*n* = 77) lower middle class, 33.5% (*n* = 115)

middle class, 5.5% (n = 19) upper middle class (n = 19), and 0.65% (n = 2) upper class (n = 2). For weight status, 58.9% (n = 202) of participants identified as "a little overweight," 31.8% (n = 109) identified as "very overweight," and 9.3% (n = 32) identified as "obese." BMIs ranged from 21.43 to 88.07 with an average BMI of 31.30 (SD = 6.74). A total of 8.2% of participants (n = 28) had a BMI between 18.5 and 24.99, 42.6% (n = 146) between 25 and 25.99, 26.8% (n = 92) between 30 and 34.99, 11.1% (n = 38) between 35 and 39.99, and 9% (n = 31) above 40. Eight participants either did not report their weight or reported a nonsensical weight that was deleted.[1] There were 28 participants who reported a BMI within the "average weight" range. Correlations between the overall FMS score and self-classified weight status (r = .36, p < .01) and overall FMS score and BMI (r = .42, p < .01) were comparable in size. A Fisher's r to z correlational comparison, which examines the significance of the difference between two correlation coefficients, revealed that BMI and self-classified weight status were not differentially associated with the FMS (z = -0.92, p = .36, two-tailed). Therefore, based on their self-classification as at least "a little overweight," these 28 participants were included in the analyses.

4.1.3 Measures

4.1.3.1 Fat Microaggressions Scale

The initial version of the FMS contained 177 items that I mapped onto 13 dimensions: Assumptions (15 items, e.g., "People assumed that I have poor hygiene"), Concern Trolling (8 items, e.g., "People have insisted they are 'only trying to help' after fat shaming me"),

[1] Participants' self-reported heights and weights were reviewed for any impractical reports. Participants were asked to report their weight in pounds, but it was possible some participants did not convert from either kilograms or stones. For each case, I converted their reported weight to pounds, from kilograms or stones, and cross-referenced with their self-described weight (e.g., "a little overweight," "very overweight," or "obese"). If one of these options made practical sense, I manually changed their weight. If not, I counted their weight as missing. The weights of twelve participants were updated, and two more were deleted.

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 (7 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-style 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*).

4.1.3.2 Demographics

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

4.1.4 Procedure

Ethics approval was granted from Western University’s Non-Medical Research Ethics Board. Ethics approval and study materials may be viewed in Appendices A– E. Participants were invited via Prolific to participate in a study about their “weight-related experiences in everyday life.” To participate, participants needed to be self-described higher-weight individuals residing in either Canada or the United Kingdom. Four identical studies were uploaded to Prolific, with each study targeting a different racial group to ensure a racially diverse sample. A

pre-screening option was also selected so the sample would be balanced across sex. I also specified that participants be pre-screened by weight status, so the study was only advertised to individuals who had self-described as “Slightly overweight,” “Overweight,” or “Very overweight” in their Prolific profile. Participants opened the link in Prolific to view the survey which was hosted on the Qualtrics platform. Once they read the letter of information and provided consent, they were asked to self-classify their weight again, in case their self-described weight no longer matched with the information in their Prolific profile. If a participant selected “Underweight” or “Average weight,” the survey ended. If they selected “A little overweight,” “Very overweight,” or “Obese,” they continued to complete the initial version of the FMS, followed by a demographic questionnaire, and then presented with a debriefing form. Participants were compensated £2.50GBP/$4.20 CAD.

4.2 Results

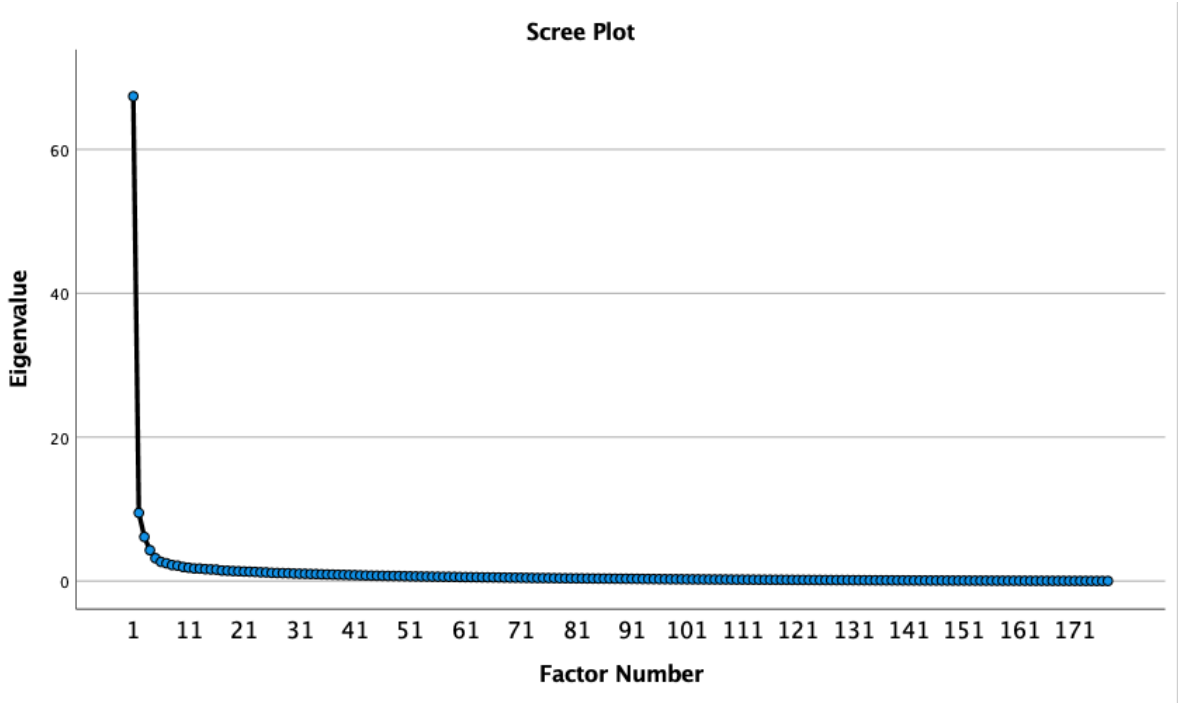
4.2.2 First Phase of Exploratory Factor Analyses

I first ran an exploratory factor analysis with all 177 items in SPSS Version 27.0. I used a direct oblimin rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO = .932) and Bartlett’s test of sphericity, $\chi^2(15576) = 50959.456$, $p < .000$, indicated the data was suitable for analysis. The scree plot (Figure 1) identified four factors. This was surprising, as we expected the factor structure to model more closely the previously discussed thirteen categories. The scale did not converge when it was set to 25 iterations. For the next EFA, I increased the number of iterations to 100.

I then ran a series of EFAs with a fixed number of factors. I first set the EFA to thirteen factors, based on the original categories that were formed in the first two studies, to test the initial hypothesis that the items would represent thirteen independent domains. The results of this

EFA did not support a coherent 13-factor structure, with every item loading onto the first factor, and many cross-loading items above .30. Next, informed by the scree plot, I ran an EFA with the number of factors fixed to four. This EFA produced a more coherent and interpretable factor structure. Based on my review of the content of each factor, it appeared that the first factor represented microaggressions experienced directly, the second represented microaggressions observed toward others or in the media, the third represented environmental or structural forms of microaggressions, and the fourth represented diet and exercise prescriptions. I determined the four-factor structure to be the best fit and used four factors moving forward.

Figure 1.
Scree Plot for Study 3 Data



4.2.3 Second Phase of Exploratory Factor Analyses

In the first phase of EFAs, I did not eliminate any of the 177 items from the scale. In the second phase of EFAs, I focused on reducing the number of items comprising the scale. Items were retained if they had a factor loading of ≥ .40. I first closely examined the items for any

redundancies that were missed previously. For each removed item, I identified another similar item that had either a higher loading or made more sense theoretically. For example, the item "I receive online comments that criticize me for my weight" was removed as it was deemed similar to "Someone has posted something mean or embarrassing about my weight online," which loaded higher. Nineteen items were removed through this process, leaving 158 items remaining for the next EFA, which resulted in another five items being removed for cross-loading. Another five items that pertained to structural stigma (e.g., "I am not able to fit through turnstiles, on amusement park rides, or similar spaces") cross-loaded onto Factor 1 and Factor 3. However, they were deemed theoretically important, and these five items were retained. An additional 31 items were removed that no longer loaded above .40 on a factor. At the end of this phase, 55 total items had been removed, and the FMS now consisted of 122 items.

4.2.4 Third Phase of Exploratory Factor Analyses

In this phase, I recorded and considered the mean, communality, outlier correlations, and number of outlier anti-image off-diagonal correlations for each of the 122 items to evaluate whether they should be retained or eliminated (Brown, 2006; Tabachnick & Fidell, 2007). Items with extremely low means (close to 1, meaning most participants selected 'never') were considered for elimination as these items were not endorsed by most people and may not be as relevant. Communality was inspected for low values which indicate the item has little in common with the other variables and considered for elimination those items with communalities below .3. Inter-item correlations that were consistently below .3 or above .7 were also considered for elimination. Anti-image off-diagonal correlations represent the pairwise correlations after partialing out the influence of other variables. Items with anti-image off-diagonal correlations above .2 suggest item redundancy and were also considered for elimination.

In addition to consideration of the information above, the theoretical importance of each item was considered, as well as preserving a coherent factor structure. For example, the item "People act as if they are afraid of me" had a communality below .3, but during the Delphi review stage I received comments from Black expert reviewers that this item was especially relevant for those in the fat Black community. Given that a key aim of this project was to create a measure that would not only be relevant for fat White people, I retained this item.

A series of EFAs were run after applying these criteria to evaluate the scale with items eliminated one-by-one, and continuously ensuring that the four-factor structure was maintained. Eighty-two items were removed through this process, leaving 40 items and the same four-factor structure that was identified during the second phase of EFAs. The cross-loading structural items mentioned earlier no longer cross-loaded onto Factors 1 and 3, and only loaded onto Factor 1. The remaining structural items on Factor 3 now all pertained to clothing.

4.2.5 Final Version of the Fat Microaggressions Scale

The final Fat Microaggressions Scale consisted of 40 items with four factors. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO = .955) and Bartlett's test of sphericity, χ^2 (780) = 7922.10, $p < .000$ were adequate. Factor 1, Direct Experiences (37.74% of variance), includes items that refer to direct experiences of public humiliation, exclusion and invalidation across contexts, including healthcare providers, colleagues, partners, strangers, a generalized other, and the structural environment (e.g., Medical staff make negative remarks, ridicule me, or call me names). Factor 2, Indirect Experiences (7.59% of variance), includes items that refer to indirect experiences of fat microaggressions through media and social encounters where individuals observe fat people and fatness being derogated and shamed (e.g., I see online comments fat shaming people). Factor 3, Clothing (3.81% of variance), includes items that refer

to the everyday lack of access and availability of clothing that fits larger-sized bodies (e.g., When shopping, clothing in my size has fewer options than smaller sizes). Factor 4, Weight Loss Prescriptions (3.37% of variance), includes items that refer to the weight-related commentary undergirded by fat stereotypes that individuals experience and prescriptions for weight loss, dieting and exercise from friends, family and others (e.g., People tell me I need to go on a diet). Each item with its corresponding factor loading is presented in Table 5.

Table 5.
Item to Factor Loadings for the Four-Factor Fat Microaggressions Scale from the final EFA: Study 3

Item	F1	F2	F3	F4
Medical staff make negative remarks, ridicule me, or call me names	.74			
Someone has posted something mean or embarrassing about my weight online	.72			
People give me disgusted looks in a grocery store or restaurant	.66			
I am not able to fit into seats at restaurants, theaters, or other public places	.60			
I am excluded from social groups or activities because of my weight	.58			
People stare or give me dirty looks in the gym	.55			
People have acted surprised that I have a romantic partner	.53			
People stared or laughed at me at the beach or pool	.52			
I am not able to comfortably fit through aisles or turnstiles	.52			
I have overheard other people making rude remarks about my weight in public	.47			
People act as if they are afraid of me	.44			
I see posters near elevators with images or slogans such as “be fit, not fat,” shaming me for not taking the stairs	.44			
I see fat people exploited for entertainment		.80		
I see fat characters being portrayed as a target of pity		.76		
I see fat characters being portrayed as unlovable		.76		

I hear fat jokes in television shows or films	.72		
I see online comments fat shaming people	.68		
I see people post comments on photos of fat people that they are "promoting obesity"	.67		
I see fat characters being portrayed as unintelligent	.66		
I overheard someone say they "feel" fat	.66		
People make fun of other fat people in front of me	.58		
I see news headlines warning about the dangers of fatness	.54		
I have heard someone make disparaging comments like "no one wants to see that" when a fat person is wearing revealing clothing	.54		
My thin friend called themselves fat in front of me	.49		
When shopping, clothing in my size has fewer options than smaller sizes		.74	
Events that give all participants free t-shirts do not provide them in my size		.67	
When shopping, stores that advertise "inclusive" sizing do not carry my size		.64	
When shopping, clothing in my size is more expensive than smaller sizes		.64	
When shopping, clothing that said "one size fits all" has not fit me		.63	
I am not able to find clothes that fit		.60	
People have told me I need to go on a diet			.86
People have suggested that I exercise more to lose weight			.76
People have told me I will get diabetes or other health issues if I do not lose weight			.74
People insisted their "concern for my health" is not fat shaming			.67
People give me unsolicited tips about weight loss			.62
People who are not health professionals ask me about my blood sugar, cholesterol, etc.			.54
People have made unsolicited comments on what I am eating			.53
People have said "good for you!" after seeing me exercise			.50
I have been told "all you really need is a little willpower"			.47

People have told me that I look much better after I have lost weight	.41

Descriptive statistics and internal reliability estimates for the total scale and subscales are presented in Table 6. Internal reliability for the full scale was excellent (α = .96). The subscales demonstrated good to excellent reliability (α = .90–.92). The average score was the highest for the Indirect Experiences subscale (*M* = 2.83, *SD* = 0.81), just below the midpoint of the scale, which corresponded to "*Sometimes*." The Clothing subscale (*M* = 2.24, *SD* = 1.04) and Weight Loss Prescriptions subscale (*M* = 2.29, *SD* = 0.87) had average scores that corresponded most closely to "*Rarely*." The Direct Experiences subscale had the lowest average score (*M* = 1.46, *SD* = 0.58), between "*Never*" and "*Rarely*," indicating that direct experiences of fat microaggressions may not occur as frequently as the other types. Factor correlations ranged from .49 to .69 (see Table 8). As a descriptive analysis, I examined the means for the total FMS and the four subscales for Asian, White, Black, and multiracial participants, shown in Table 7.

Table 6.
Scale and Subscale Reliability, Means, and Factor Correlations from Study 3

	Number of items	Cronbach's Alpha	Mean	SD	Min	Max
1. Full FMS	40	.96	2.20	.66	1.22	3.21
2. Direct	12	.91	1.46	.58	1.22	1.70
3. Indirect	12	.92	2.83	.81	2.44	3.19
4. Clothing	6	.90	2.24	1.04	1.88	2.68
5. Weight Loss	10	.92	2.29	.87	1.62	3.03

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

Table 7.
FMS Means across Racial Groups from Study 3

	Group *n*	FMS Mean (*SD*)	Direct Mean (*SD*)	Indirect Mean (*SD*)	Clothing Mean (*SD*)	Weight loss Mean (*SD*)
Asian	103	2.15 (.65)	1.46 (.56)	2.69 (.81)	2.04 (.88)	2.38 (.91)
White	98	2.27 (.75)	1.52 (.65)	2.91 (.87)	2.34 (1.16)	2.36 (.92)
Black	85	2.14 (.63)	1.39 (.54)	2.82 (.78)	2.26 (1.03)	2.16 (.86)
Multiracial	46	2.22 (.56)	1.44 (.55)	2.98 (.72)	2.24 (1.03)	2.11 (.70)

4.2.6 Discussion

In this study, a functional scale of fat microaggressions was achieved. I performed a thorough series of exploratory factor analyses with a racially and gender diverse sample of higher-weight adults and determined a four-factor structure with 40 items was appropriate and represented direct experiences of microaggressions, indirect experiences of microaggressions, clothing-related microaggressions, and weight loss prescriptions. The scale and subscales demonstrated excellent internal reliability.

There are several important observations from this analysis. The 13 categories originally created to organize the items based on the content of tweets using #FatMicroagressions were highly specific and too numerous. These previously described 13 domains may not be as relevant to the experience of microaggressions as the degree of closeness to the target, which encompasses the Direct Experiences, Indirect Experiences, and Clothing subscales, or that people feel permitted to prescribe weight loss advice to fat people in a fat phobic culture. However, it is notable that these original domains are each represented among these larger four categories. For example, the items “Someone has posted something mean or embarrassing about my weight online” and “I see online comments fat shaming people” were both initially categorized as “Media”; however, in the EFA, the former item loaded onto the Direct

Experiences factor, and the latter item onto the Indirect Experiences factor. Similarly, items from the "Health" domain are represented across the Direct Experiences factor (e.g., Medical staff make negative remarks, ridicule me, or call me names) and the Weight Loss Prescriptions factor (e.g., People have told me I will get diabetes or other health issues if I do not lose weight.) These 13 original categories were first formed to analyze the #FatMicroaggressions tweets, but do not appear to be necessary for a scale of fat microaggressions. The four factors here are suitable for encapsulating the experiences of fat microaggressions, with each subscale representing a notable and distinct product of anti-fat attitudes.

Further, before the creation of the 13 domains, the items were initially categorized according to Sue et al.'s (2007) framework of microassault, microinsult, and microinvalidation, which were originally formed to categorize racial microaggressions. These three categories are also represented within the factors here in the FMS. The items on the Direct and Indirect Experiences factor contain a mix of all three of Sue et al.'s (2007) types of microaggressions. For example, medical staff ridiculing someone may be classified as a microassault, giving a dirty look at the gym a microinsult, and not being able to fit through aisles a microinvalidation. Each of these experiences loaded onto the Direct Experiences factor. The Clothing subscale items were initially thought of as microinvalidations– the lack of adequate clothing for larger bodies excludes and negates the daily reality of higher-weight people. Many of the items on the Weight Loss Prescriptions factor appear to be microinsults (e.g., People have told me I need to go on a diet) or microinvalidations (e.g., I have been told "all you really need is a little willpower.). While Sue et al.'s (2007) framework may not be the principal categorization for fat microaggressions, there still exists some overlap of the categories.

In the next study, I aim to confirm the four-factor structure in a new sample of higher-weight adults. I also plan to provide initial evidence of construct validity, including convergent, discriminant, incremental, and known-groups validity.

Chapter 5

5 Study Four – Confirmatory Factor Analysis and Tests of Convergent, Discriminant, Incremental, and Known Groups Validity

In this study, I aimed to confirm the factor structure of the FMS in an independent sample of higher-weight adults. I also provided initial evidence of convergent and discriminant validity by examining associations between the FMS and internalized weight bias, a different measure of experienced weight stigma, perceived stress, and self-rated health. I then aimed to assess incremental validity by testing whether the FMS accounted for unique variance in a behavioral measure assessing avoidance of activities due to how a person feels about their weight, beyond other measures of weight bias. Criterion validity was assessed by conducting additional hierarchical linear regressions predicting avoidance of activities and stress. I then assessed known groups validity by comparing the FMS scores across three different weight status groups.

5.1 Method

5.1.2 Participants

Participants (N = 410; M_{age} = 37.07, SD = 12.41) included in this study were again higher-weight individuals residing in either Canada or the United Kingdom, recruited via Prolific. The sample was comprised of 54.6% women (n = 224), 43.7% men (n = 179), and 0.2% non-binary (n = 1) individuals. Six (1.5%) participants preferred not to disclose their gender identity. A total of 43.2% (n = 177) participants identified as White, 25.6% (n = 105) as Asian, 16.8% (n = 69) as Black, 10.5% (n = 43) as multiracial, 2.9% (n = 12) as Latin/Hispanic, and 0.7% (n = 3) as Indigenous. One participant did not disclose their race/ethnicity. Most of the

sample identified as straight (81.2%, *n* = 333), followed by bisexual (9.3%, *n* = 38), asexual (4.1%, *n* = 17), lesbian/gay (2.7%, *n* = 11), unlabeled (0.5%, *n* = 2), queer (0.2%, *n* = 1), and heteroflexible (0.2%, *n* = 1). Seven (1.7%) participants preferred not to disclose their sexual identity. In regard to socioeconomic status, 5.1% (*n* = 21) of participants described themselves as lower class, 31.2% (*n* = 128) working class, 24.4% (*n* = 100) lower middle class, 34.4% (*n* = 141) middle class, 4.6% (*n* = 19) upper middle class, and 0.65% (*n* = 2). No participants identified as upper class, and one participant did not disclose their socioeconomic status. 54.9% (*n* = 225) of participants identified as "a little overweight," 27.8% (*n* = 114) identified as "very overweight," and 17.3% (*n* = 71) identified as "obese." BMIs ranged from 19.63 to 71.55 with an average BMI of 31.74 (*SD* = 7.01). 11.2% of participants (*n* = 46) had a BMI between 18.5 and 24.99, 36.6% (*n* = 150) between 25 and 25.99, 24.9% (*n* = 102) between 30 and 34.99, 11.2% (*n* = 46) between 35 and 39.99, and 11.7% (*n* = 48) above 40. Seventeen participants either did not report their weight or reported a nonsensical weight that was deleted.[2] There were 46 participants who reported a BMI within the "average weight" range. The correlations between the overall FMS score and self-classified weight status ($r = .47$, $p < .01$) and overall FMS score and BMI ($r = .52$, $p < .01$) were again comparable in size. A Fisher's *r* to *z* correlational comparison revealed that BMI and self-classified weight status were not differentially associated with the FMS ($z = -0.95$, $p = .34$, two-tailed). Therefore, based on their self-classification as at least "a little overweight," these 46 participants were included in analyses.

[2] Participants' self-reported heights and weights were reviewed for any impractical reports. Participants were asked to report their weight in pounds, but it was possible some participants did not convert from either kilograms or stones. For each case, I converted their reported weight to pounds, from kilograms or stones, and cross-referenced with their self-described weight (e.g., "a little overweight," "very overweight," or "obese"). If one of these options made practical sense, I manually changed their weight. If not, I counted their weight as missing. The weights of thirteen participants were updated, and one was deleted.

5.1.3 Measures

5.1.3.1 Fat Microaggressions Scale

Based on the EFA results, the FMS contains forty 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 (6 items; "When shopping, clothing in my size has fewer options than smaller sizes"), and Weight Loss Prescriptions (11 items; e.g., "People tell me I need to go on a diet"). Items were rated on a 5-point Likert-style scale from 1 (*Never*) to 5 (*Most days*), with the exception of some items in the clothing subscale which were rated from 1 (*Never)* to 5 (*Usually*). Scores are calculated by taking the average of all responses. Higher scores indicate more frequent experiences of fat microaggressions. In this sample, Cronbach's alpha was .96 for the full scale. Cronbach's alphas for each of the subscales were also excellent: Direct Experiences (α = .92), Indirect Experiences (α = .91), Clothing (α = .93), and Weight Loss Prescriptions (α = .94).

5.1.3.2 Stigmatizing Situations Inventory-Brief

The Stigmatizing Situations Inventory-Brief (SSI-B; Vartanian, 2015) is a shortened 10-item version of the 50-item Stigmatizing Situations Inventory (Myers & Rosen, 1999), assessing experiences of weight stigma. An example item is "Children loudly making comments about your weight to others." Items are scored from 0 (*Never*) to 9 (*Daily*). Total scores are calculated by averaging responses, with higher scores indicating more frequent experiences of weight stigma. 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 convergent validity (Vartanian, 2015). In this sample, Cronbach's alpha was .91.

5.1.3.3 Weight Bias Internalization Scale-Modified

The Weight Bias Internalization Scale-Modified (WBIS-M; Pearl & Puhl, 2014) contains eleven items assessing internalized weight bias. An example item is "I feel anxious about my weight because of what people might think of me." Items are ranked from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Total scores are calculated by averaging responses, after reverse scoring, with higher scores indicating greater feelings of internalized weight bias. 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). In this sample, Cronbach's alpha was .94.

5.1.3.4 Perceived Stress Scale 4

The Perceived Stress Scale (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*). After certain items are reverse scored, total scores are averaged, with higher scores indicate greater feelings of stress over the past month. The PSS has moderate to strong positive associations with depression and anxiety and has been found to have significantly lower scores in people who are young, employed, and earning a high income, supporting the scale's construct validity (Lee, 2012). In this sample, Cronbach's alpha was .81.

5.1.3.5 Restricted Activities Scale

The Restricted Activities Scale (REACT; 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 up by nine subscales: Vocational/Educational (3 items; "Considering/planning to go to school"), Food

(4 items; e.g., “Eating in front of others”), Appearance (5 items; e.g., “Wearing shorts and/or bathing suits), Physical activities/exercise (1 item; e.g., “Participating in a health club and/or an exercise class”), Health activities (3 items; e.g., “going to the doctor”), Emotional (5 items; e.g., “Feeling desirable, ‘sexy’ or attractive”), Social activities (4 items; e.g., “Doing things with other people/socializing”), Dating/relationships activities (4 items; e.g., “Flirting), Sexual relationships/activities (6 items; e.g., “Letting my/a partner see me naked”). The end of the scale contains two additional open-ended text box questions: “Doing something I’ve always wanted to do” and “Something else?”. Responses to these open-ended items were not included in the analyses. 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 summing all responses, giving a possible range of 0–185. The subscale scores are calculated by taking the average of all applicable items for that subscale. Higher scores indicate greater avoidance of activities because of one’s weight. The REACT scale has demonstrated good internal reliability in samples of higher-weight adults (Robinson & Bacon, 1996; Meadows, 2014). In this sample, Cronbach’s alpha for the overall scale was .98. Cronbach’s alpha for each of the subscales were as follows: Vocational/Educational (α = .89), Food (α =.90), Appearance (α =.85), Health activities (α =.69), Emotional (α =.93), Social activities (α =.92), Dating/relationships activities (α =.95), Sexual relationships/activities (α =.97).

5.1.3.6 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*. Scores are calculated by averaging responses. Self-rated health is commonly measured with this single item and has been found to be

moderately to strongly correlated with physicians' assessments of patients' health, (Bombak, 2013). Further, research has found 1-item scales to often be just as reliable as multi-item measures (Allen et al., 2022).

4.1.3.7 Demographics

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

5.1.4 Procedure

Ethics approval was granted from Western University's Non-Medical Research Ethics Board. Ethics approval and study materials may be viewed in Appendices A and F–H. Using the same procedure as the previous study, participants were invited via Prolific to participate in a study about their "weight-related experiences in everyday life." Participants were again recruited if they self-described as higher-weight individuals residing in either Canada or the United Kingdom. Four identical studies were uploaded to Prolific, with each study targeting a different racial group to ensure a racially diverse sample, and the pre-screening option was selected so the sample would also be balanced across sex. Participants were also pre-screened in Prolific so they study was only advertised to them if they self-described as "Slightly overweight," "Overweight," or "Very overweight." Another pre-screening option was selected so this study would not appear to Prolific users who had participated in the previous study (Study 3). Participants opened the link in Prolific to view the survey in Qualtrics. Once they read the letter of information and consented, they were asked to self-classify their weight again, in case their self-described weight no longer matched with the information they had provided Prolific when they had originally created their account. If the participant selected "Underweight" or "Average weight," the survey ended. If they selected "A little overweight," "Very overweight," or "Obese," they were able to

continue with the survey. Participants received the 40-item FMS, WBIS-M, PSS-4, SSI-B, REACT, and one item to assess self-rated health, presented in a randomized order. This was followed by a demographic questionnaire. Participants were compensated £2.50GBP/$4.20 CAD.

5.2 Results

5.2.2 Preliminary Analyses and Descriptive Statistics

The Confirmatory Factor Analysis was conducted in RStudio. All other analyses were conducted using SPSS 27.0. I ran a missing data analysis for each measure using Little's MCAR test, which supported the assumption that the data on the FMS, χ^2 (393) = 378.81, p = .69, SSI-B, χ^2 (27) = 22.08, p = .73, and WBIS-M, χ^2 (29) = 15.29, p = .98, are missing completely at random. Little's MCAR test for the PSS-4 did not indicate that the data were missing completely at random, χ^2 (6) = 18.44, p < .01, but this result may have been due to the measure only containing four items, two of which were each missing one response. I did not run Little's MCAR test on the REACT measure, because participants were able to skip questions that were not relevant to them. The percentage of missing values for the FMS was very low (0.28%), so I did not impute any missing values. The percentage of missing values for the other measures was also very low: SSI-B (0.07%), WBIS-M (0.09%), and PSS-4 (0.12%). I also examined skewness and kurtosis levels for each measure and subscale. All were well within the acceptable range (skewness < 2, kurtosis < 7; Fabrigar et al., 1999).

I again examined the means and standard deviations for the FMS and its subscales (see Table 10). The average score on the overall FMS in this study was 2.50, just below the midpoint of the scale. Again, the Direct Experiences subscale had the lowest mean (M = 1.64), while the Indirect Experiences subscale had the highest mean, just above the midpoint of the scale (M =

3.19). The average scores for the Clothing subscale (M = 2.60) and the Weight Loss Prescriptions subscale (M = 2.56) were also just below the midpoint of the scale. Internal reliability for the total scale (α = .96), and the subscales (α = .91–.94), was again excellent. As expected, the subscales positively correlated with each other (r = .48-.66), with a similar range to the previous study (see Table 8).

Table 8.
Factor Correlations for Study 3 and 4

	1.	2.	3.	4.	5.
1. Full FMS	-	.86**	.82**	.79**	.90**
2. Direct	.83**	-	.57**	.66**	.71**
3. Indirect	.83**	.51**	-	.48**	.65**
4. Clothing	.78**	.65**	.49**	-	.63**
5. Weight Loss	.88**	.69**	.64**	.59**	-

Note. Factor correlations for Study 3 are below the diagonal, while correlations for Study 4 are above the diagonal.

5.2.3 Confirmatory Factor Analysis

To verify the four-factor structure of the FMS, I ran a confirmatory factor analysis on the 40-item FMS scale in RStudio with maximum likelihood estimation. I assessed 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). According to Hu & Bentler's (1999) guidelines, values around ≥ .95 for CFI, ≤ .06 for RMSEA, and ≤ .08 for SRMR indicate a good fit of the model to the data; and values between .90–.94 for CFI, .07–.10 for RMSEA, and .09–.10 for SRMR indicate an acceptable fit. I specified each FMS item to load on its intended factor. 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, χ^2 (734) = 1508.07, $p < .000$.

In a careful review of the final set of items, I 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 was originally loading. When this item was added to the Weight Loss Prescriptions factor, the model fit remained good, CFI = .92, RMSEA = .052 (90% CI = 0.048, 0.056), SRMR = .058, χ^2 (734) = 1516.67, $p < .001$.

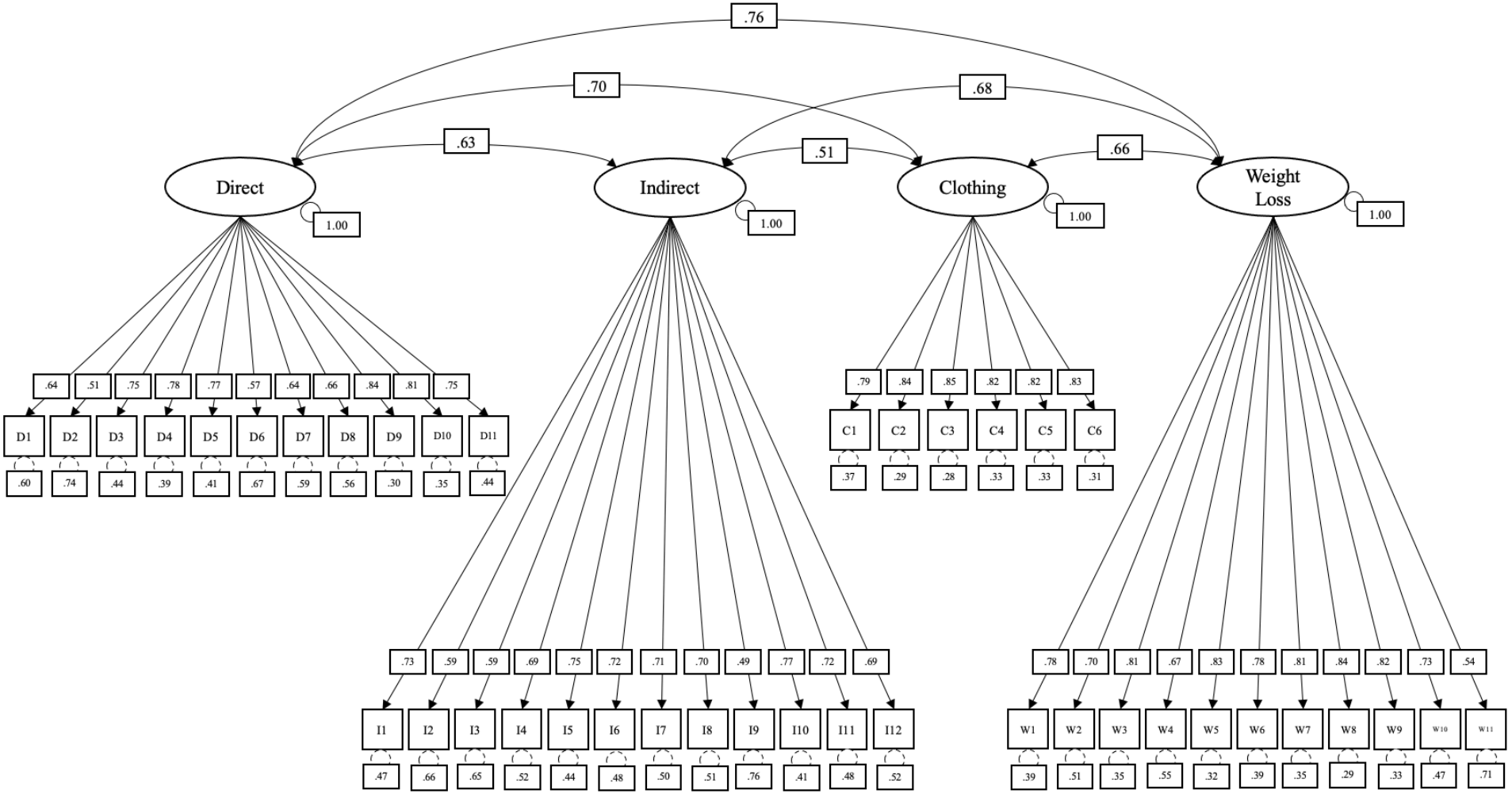
Because the fit indices were comparable and the item theoretically made more sense on this factor, it was moved to the Weight Loss Prescriptions subscale. Table 9 shows the factor loadings from this CFA. See Figure 2 for a visual depiction of the confirmatory factor analysis with the standardized loadings and variances for each observed variable, as well as the standardized covariances between factors.

Table 9.
Item to Factor Loadings for the Four-Factor Fat Microaggressions Scale from the Second CFA: Study 4

Item	F1	F2	F3	F4
People give me disgusted looks in a grocery store or restaurant	.84			
I have overheard other people making rude remarks about my weight in public	.81			
I am excluded from social groups or activities because of my weight	.78			
People stare or give me dirty looks in the gym	.77			
People have acted surprised that I have a romantic partner	.75			
People stared or laughed at me at the beach or pool	.75			
Medical staff make negative remarks, ridicule me, or call me names	.66			
Someone has posted something mean or embarrassing about my weight online	.64			
I am not able to fit into seats at restaurants, theaters, or other public places	.64			
I am not able to comfortably fit through aisles or turnstiles	.57			
People act as if they are afraid of me	.51			
I see fat characters being portrayed as a target of pity		.77		
I see online comments fat shaming people		.75		
I have heard someone make disparaging comments like “no one wants to see that” when a fat person is wearing revealing clothing		.73		
I hear fat jokes in television shows or films		.72		
I see fat characters being portrayed as unlovable		.72		
I see people post comments on photos of fat people that they are “promoting obesity”		.71		
I see fat people exploited for entertainment		.70		
People make fun of other fat people in front of me		.69		

I see fat characters being portrayed as unintelligent	.69		
I overheard someone say they “feel” fat	.59		
My thin friend called themselves fat in front of me	.59		
I see news headlines warning about the dangers of fatness	.49		
When shopping, clothing in my size has fewer options than smaller sizes		.85	
When shopping, clothing that said “one size fits all” has not fit me		.84	
When shopping, stores that advertise “inclusive” sizing do not carry my size		.83	
When shopping, clothing in my size is more expensive than smaller sizes		.82	
Events that give all participants free t-shirts do not provide them in my size		.82	
I am not able to find clothes that fit		.79	
People have told me I need to go on a diet			.84
People give me unsolicited tips about weight loss			.83
People have suggested that I exercise more to lose weight			.82
People insisted their “concern for my health” is not fat shaming			.81
People have made unsolicited comments on what I am eating			.81
I have been told “all you really need is a little willpower”			.78
People have told me I will get diabetes or other health issues if I do not lose weight			.78
People have said “good for you!” after seeing me exercise			.73
People who are not health professionals ask me about my blood sugar, cholesterol, etc.			.70
People have told me that I look much better after I have lost weight			.67
I see posters near elevators with images or slogans such as “be fit, not fat,” shaming me for not taking the stairs			.54

Figure 2.
Visual Depiction of Confirmatory Factor Analysis for the 40-item FMS



5.2.4 Convergent and Discriminant Validity

To assess convergent and discriminant validity of the FMS, I chose another measure of experienced weight stigma, internalized weight stigma, and other measures related to health and wellbeing. I expected the FMS to positively correlate with the SSI-B and WBIS-M to ensure that the FMS measures related constructs, as well as be weakly associated with negative health outcomes, providing evidence that the FMS is not simply measuring distress. I examined the bivariate correlations between the FMS and measures of internalized weight stigma (WBIS-M), experienced weight stigma (SSI-B), perceived stress (PSS-4), and self-rated health. The correlation between the FMS and SSI-B was high ($r = .79$, $p < .01$) but expected as they both measure experienced weight stigma, providing evidence of convergent validity. I also expected the FMS to positively correlate with the WBIS-M ($r = .60$, $p < .01$) as a measure of internalized weight stigma, supporting convergent validity. The FMS correlated significantly but weakly with the PSS-4 ($r = .45$, $p < .01$) and self-rated health ($r = -.22$, $p < .01$), suggesting the FMS is not merely an indicator of distress, and providing evidence of discriminant validity. See Table 10 for the bivariate correlations and each measure's alpha, mean, and standard deviation.

Table 10.
Zero-order Correlations Between FMS and Related Constructs from Study 4

	1	2	3	4	5	6	7	8	9
1. FMS	-								
2. Direct	.86**	-							
3. Indirect	.82**	.57**	-						
4. Clothing	.79**	.66**	.48**	-					
5. Weight loss	.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. Health	-.22**	-.23**	-.15**	-.20**	-.18**	-.23**	-.36**	-.34**	-
Alpha	.96	.92	.91	.93	.94	.91	.94	.81	-
Mean	2.50	1.64	3.19	2.60	2.56	1.34	4.41	1.94	2.53
SD	0.71	0.71	0.75	1.15	0.93	1.39	1.44	0.83	0.83
Min	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Max	4.25	4.36	4.83	5.00	5.00	8.90	7.00	4.00	5.00

Note. ** Correlation is significant at the .01 level (two-tailed). FMS = Fat Microaggressions Scale. SSI-B = Stigmatizing Situations Inventory-Brief. WBIS-M = Weight Bias Internalization Scale-Modified. PSS-4 = Perceived Stress Scale-4.

5.2.5 Incremental Validity

To examine the incremental validity of the FMS, I ran a hierarchical linear regression with avoidance of activities (assessed with the REACT scale) regressed on internalized weight stigma (WBIS-M), experiences of weight stigma (SSI-B), and fat microaggressions (FMS). I predicted that the FMS would account for additional unique variance in how much someone would avoid various activities because of how they feel about their weight, beyond the WBIS-M and SSI-B. Given the strong association between the FMS and the SSI-B, this analysis provided a conservative test of the role of FMS in people's avoidance of activities of daily living.

Demographic variables (i.e., weight group, race, gender, age, socioeconomic status) were entered at Step 1. The WBIS-M and SSI-B were entered at Step 2, and the FMS was entered at Step 3. The REACT scale was entered as the dependent variable. Table 10 presented the full regression results. At Step 1, weight group, gender, age, and SES were significant predictors of avoiding activities because of one's weight. When the WBIS-M and SSI-B were added at Step 2, the demographic variables were no longer significant, but both the WBIS-M and SSI-B were now significant predictors. At Step 3, the FMS was also a significant predictor, and the WBIS-M and SSI-B were weaker albeit still significant predictors. The FMS accounted for 2.0% of the variance in avoiding activities because of how feels about their weight beyond the WBIS-M and SSI-B, providing support for incremental validity. The results can be found in Table 11.

I then ran the same hierarchical linear regression but with perceived stress (the PSS-4) as the dependent variable. I expected the FMS to account for additional unique variance in perceived stress beyond the various demographic variables and the WBIS-M and SSI-B. At Step 1, I entered weight group, gender, age, race, socioeconomic status. At Step 2, I added the WBIS-M and SSI-B. The FMS was then entered at Step 3. At Step 1, weight group, age, and SES were significant predictors of the perceived stress. Once I added WBIS-M and SSI-B, these measures were also significant predictors. At Step 3, the FMS was entered and also a significant predictor of PSS-4. The FMS accounted for 1.0% of unique variance in perceived stress beyond the demographic variables, WBIS-M, and SSI-B, providing additional evidence of incremental validity. These results are shown in Table 11.

Table 11.

Test of Incremental Validity from Study 4

	β	*t*	*adj* R^2	ΔR^2	ΔF	sr^2
Criterion: REACT						
Step 1			.20	21	20.73***	
Weight group	.30	6.43***				.083
Race	-.03	-.58				.001
Gender	-.10	-2.19*				.010
Age	-.25	-5.44***				.058
SES	-.14	-3.04**				.020
Step 2			.66	.46	275.85***	
Weight group	-.03	-.86				.001
Race	-.01	-.34				.000
Gender	-.01	-.20				.000
Age	-.04	-1.39				.002
SES	.02	.75				.000
WBIS-M	.55	14.92***				.187
SSI-B	.40	11.77***				.116
Step 3			.68	.02	25.23***	
Weight group	-.07	-2.10*				.003
Race	-.01	-.37				.000
Gender	.02	.55				.000
Age	-.04	-1.20				.001
SES	.02	.61				.000
WBIS-M	.49	13.16***				.137
SSI-B	.24	4.96***				.019
FMS	.23	5.02***				.020
	β	*t*	*adj* R^2	ΔR^2	ΔF	sr^2
Criterion: PSS-4						
Step 1			.18	.19	18.16***	
Weight group	.10	2.04*				.008

Race	-.02	-.34				.000
Gender	-.02	-.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	.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	.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	.37				.000
FMS	.19	2.59**				.010

Note. *** = $p < .001$. ** = $p < .01$. * = $p < .05$. 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.

5.2.6 Known Groups Validity

Known groups validity was assessed by running a one-way ANOVA comparing the FMS total and subscale scores among three self-identified weight status groups (i.e., a little overweight, very overweight, and obese). There were 225 participants who classified themselves

as “a little overweight,” 114 as “very overweight,” and 71 as “obese.” I hypothesized that the self-classified “obese” group would have the highest scores on the FMS, while those who self-classified as “a little overweight” would have the lowest FMS scores. The “very overweight” group’s FMS scores should fall in between the other two groups. Levene’s test indicated that the assumption of homogeneity of variance had been violated for the Direct Experiences subscale, $F(2,403) = 11.645$, $p < .001$; therefore Welch’s F is reported, and demonstrated a significant group difference on the overall FMS mean score, $F(2,171.53) = 58.085$, $p < .001$. There were also significant differences between groups for all FMS subscales (see Table 12). The post-hoc Games-Howell tests revealed significant differences between each pair of weight groups on all subscales, except for the “very overweight” and “obese” groups on the Weight Loss Prescriptions subscale. Excluding these two exceptions, for each subscale, the “obese” group scored higher than the “very overweight,” and the “very overweight” group scored higher than the “a little overweight” group. Results of the post-hoc Games-Howell tests can be found in Table 13.

Table 12.
Test of Known Groups Validity

	A little overweight *M* (SD)	Very overweight *M* (SD)	Obese *M* (SD)	Welch’s *t*	*F*	η^2
Full FMS	2.22 (.61)	2.68 (.66)	3.08 (.63)	58.09***	57.64***	.22
Direct	1.41 (.50)	1.76 (.71)	2.20 (.72)	41.70***	48.20***	.19
Indirect	3.01 (.71)	3.28 (.73)	3.60 (.70)	21.50***	21.00***	.09
Clothing	2.06 (.92)	2.95 (1.01)	3.76 (.92)	101.97***	97.73***	.33
Weight Loss	2.28 (.89)	2.81 (.86)	3.05 (.84)	28.18***	27.70***	.11

Note. *** = $p < .001$

Table 13.

Post-Hoc Games-Howell Results

	(I) Weight group	(J) Weight group	Mean Difference (I–J)	Std. Error
Full FMS	A little overweight	Very overweight	-0.46***	.07
		Obese	-0.86***	.09
	Very overweight	A little overweight	0.46***	.07
		Obese	-0.40***	.10
	Obese	A little overweight	0.86***	.09
		Very overweight	0.40***	.10
Direct	A little overweight	Very overweight	-0.35***	.07
		Obese	-0.78***	.09
	Very overweight	A little overweight	0.35***	.07
		Obese	-0.43***	.11
	Obese	A little overweight	0.78***	.09
		Very overweight	0.43***	.11
Indirect	A little overweight	Very overweight	-0.27***	.08
		Obese	-0.61***	.10
	Very overweight	A little overweight	0.27**	.08
		Obese	-0.34**	.11
	Obese	A little overweight	0.61***	.10
		Very overweight	0.34**	.11
Clothing	A little overweight	Very overweight	-0.89***	.11
		Obese	-1.70***	.12
	Very overweight	A little overweight	0.89***	.11
		Obese	-0.81***	.14
	Obese	A little overweight	1.70***	.12
		Very overweight	0.81***	.14
Weight Loss	A little overweight	Very overweight	-0.54***	.10
		Obese	-0.77***	.12
	Very overweight	A little overweight	0.53***	.10
		Obese	-0.24	.13
	Obese	A little overweight	0.77***	.12
		Very overweight	0.24	.13

Note. *** = $p < .001$. ** = $p < .01$.

5.3 Discussion

In this study, I performed a CFA on the FMS in an independent sample of higher-weight adults, confirming that the four-factor structure was appropriate. I provided initial evidence of convergent and discriminant validity by examining the associations between the FMS and another measure of experienced weight stigma, internalized weight bias, perceived stress, and self-rated health. Incremental validity was supported through hierarchical linear regressions predicting scores on the REACT scale and the PSS-4. Finally, known-groups validity was supported through a comparison of FMS scores by self-classified weight status, those who self-classified as larger-sized scoring higher on the FMS compared to those who self-classified as smaller-sized.

On average, participants in Study 4 demonstrated higher scores on the FMS than in Study 3. This may be due to a higher percentage of people in Study 4 that self-classified as "obese" than in Study 3. The known-groups validity test did confirm that those who self-classified as "obese" scored higher on the FMS than those who classified as "very overweight," who also scored higher than those who classified in the "a little overweight" category. The post-hoc tests indicated this to be true for all subscales, except for the Weight Loss Prescriptions subscale, where there were no differences between those who were "very overweight" and "obese." This indicates that generally, as weight increases, people are more frequently targeted by fat microaggressions. It might be expected that scores on the Indirect Experiences subscale would be similar across weight groups, however, those in higher weight groups may simply have greater awareness when these microaggressions occur. Further, the lack of a difference between the "very overweight" and "obese" groups on the Weight Loss Prescriptions subscales indicates that

as observers, people may not distinguish between these two groups, and that once someone is perceived as “very overweight,” others believe there should be an attempt to lose weight.

The aims of the final study include further validity testing and to assess test-retest reliability. Specifically, I will examine the FMS in relation to measures of self-esteem, trauma symptoms from discrimination, depression, anxiety, and stress, positive and negative affect, and the Two-Factor Weight Bias Internalization Scale (to better distinguish between distress and self-devaluation in their relation to the FMS). I also will administer the FMS to a subset of participants from the present study four weeks later to estimate test-retest reliability of the scale.

Chapter 6

6 Study Five – Test-Retest Reliability and Further Validity Testing

The main aim of Study 5 was to assess test-retest reliability of the FMS four weeks after it was first administered in the previous study. I also intended to conduct further validity testing with constructs related to mental health that may be uniquely linked to the experience of fat microaggressions.

6.1 Method

6.1.2 Participants

The participants from this study (N = 197, M_{age} = 40.54, SD = 12.90) were recruited from the pool of participants who completed Study 4. A total of 49.7% (n = 98) as men identified as men, 48.7% (n = 96) as women, 0.5% (n = 1) as non-binary, and 1% (n = 2) preferred not to disclose their gender identity. A total of 40.6% (n = 80) of participants were White, 26.9% (n = 53) Asian, 14.7% (n = 29) Black, 3.0% (n = 6) Latin/Hispanic, 0.5% (n = 1) Indigenous, and 13.2% (n = 26) multiracial. Also, 1.0% (n = 2) of participants did not disclose their racial identity. A total of 83.8% (n = 165) of participants identified as straight, 7.1% (n = 2) as bisexual, 3.5% (n = 2) as gay/lesbian, 1.5% (n = 2) as asexual, and 1.0% (n = 2) as queer, and 3.0% (n = 6) of participants preferred not to disclose their sexual identity. 5.1% (n = 10) were lower class, 28.4% (n = 56) as working class, 23.9% (n = 47) as lower middle class, 36.0% (n = 71) as middle class, and 6.6% (n = 12) as upper middle class. 63.5% (n = 125) of participants self-classified as “a little overweight,” 22.8% (n = 45) as “very overweight,” and 13.7% (n = 27) as obese. BMIs ranged from 18.72 to 54.86 with an average BMI of 31.22 (SD = 6.01). 9.1% of participants (n = 18) had a BMI between 18.5 and 24.99, 39.1% (n = 77) between 25 and 25.99, 27.9% (n = 55) between 30 and 34.99, 7.1% (n = 14) between 35 and 39.99, and 10.7% (n = 21)

above 40. Fifteen participants either did not report their weight or reported a nonsensical weight that was deleted.[3] There were 18 participants who reported a BMI within the "average weight" range. The correlations between the overall FMS score and self-classified weight status ($r = .46$, $p < .01$) and overall FMS score and BMI ($r = .43$, $p < .01$) were again comparable in size. A Fisher's r to z correlational comparison revealed that BMI and self-classified weight status were not differentially associated with the FMS ($z = .37$, $p = .71$, two-tailed). Therefore, based on their self-classification as at least "a little overweight," these 18 participants were included in the analyses.

6.1.3 Measures

6.1.3.1 Fat Microaggressions Scale

The FMS contains forty 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 (6 items; "When shopping, clothing in my size has fewer options than smaller sizes"), and Weight Loss Prescriptions (11 items; e.g., "People tell me I need to go on a diet"). Items were rated on a 5-point Likert-style scale from 1 (*Never*) to 5 (*Most days*), except for some items on the Clothing subscale which were rated from 1 (*Never)* to 5 (*Usually*). Scores are calculated as the average of the responses across all items and for each subscale. Higher total and subscale scores indicate more frequent experiences of fat microaggressions. In this sample, Cronbach's alpha for the full

[3] Participants' self-reported heights and weights were reviewed for any impractical reports. Participants were asked to report their weight in pounds, but it was possible some participants did not convert from either kilograms or stones. For each case, I converted their reported weight to pounds, from kilograms or stones, and cross-referenced with their self-described weight (e.g., "a little overweight," "very overweight," or "obese"). If one of these options made practical sense, I manually changed their weight. If not, I counted their weight as missing. The weights of five participants were updated, and three were deleted.

scale was .97. Cronbach's alphas for each of the subscales were also high: Direct Experiences (α = .93), Indirect Experiences (α = .92), Clothing (α = .94), and Weight Loss Prescriptions (α = .94). The final FMS is presented in Appendix I.

6.1.3.2 Two-Factor Weight Bias Internalization Scale

The Two-Factor Weight Bias Internalization Scale (WBIS-2F; Meadows & Higgs, 2019) is a measure of internalized weight bias with two subscales; self-devaluation and weight-related distress. 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: "Whenever I think a lot about being overweight, I feel depressed." 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 higher-weight adults, confirming its two-factor structure (Meadows & Higgs, 2019). In this sample, Cronbach's alpha for the self-devaluation subscale was .77, and for the distress subscale .83.

6.1.3.3 Depression Anxiety Stress Scale-21

The Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995) is a 21-item measure that assesses distress with three subscales: Depression, Anxiety, and Stress. Items (e.g., Depression: "I found it difficult to work up the initiative to do things;" Anxiety: "I felt scared without any good reason"; Stress: "I found it difficult to relax") were ranked 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 3-factor structure has been confirmed in several studies (Clara et al., 2001; Daza et al., 2002; Sinclair et

al., 2012), and all DASS-21 subscales negatively correlate with self-esteem, physical well-being, and another measure of mental health (Sinclair et al., 2012), supporting its construct validity. Cronbach's alphas for each of the subscales were high: Depression (α = .94), Anxiety (α = .87), and Stress (α = .90).

6.1.3.4 The Trauma Symptoms of Discrimination Scale

The Trauma Symptoms of Discrimination Scale (TSDS; 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 scored from 1 (*Never*) to 4 (*Often*) and a total score is calculated by summing all responses. The TSDS has shown excellent internal consistency and test-retest validity (Williams et al., 2018). It also positively correlates with other measures of discrimination, depression, and social anxiety, supporting its construct validity (Williams et al., 2018). In this sample, Cronbach's alpha was .98.

6.1.3.5 Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSES; 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 RSES has demonstrated good test-retest reliability (Torrey et al., 2000) and negative associations with depression, anxiety, and stress (Sinclair et al., 2010). In this sample, Cronbach's alpha was .94.

6.1.3.6 Positive and Negative Affect Schedule

The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) is a 20-item measure that measures both positive and negative affect with two 10-item subscales. Participants are presented with a list of 20 words that describe positive emotions (PA; e.g., "excited", "proud") and negative emotions (NA; 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 each type of affect. The PANAS has demonstrated good reliability and correlates with measures of depression, anxiety, and stress (PA negatively, NA positively), supporting construct validity (Crawford & Henry, 2004). Cronbach's alpha for both the PA and NA subscales in this sample was .93.

6.1.4 Procedure

Ethics approval was granted from Western University's Non-Medical Research Ethics Board. Ethics approval and study materials may be viewed in Appendices J–M. This study was advertised via Prolific only to those who had participated in Study 5. Posted approximately four weeks after the previous study's data collection was completed, participants were told that after completing Phase 1 of this research, they were now invited to participate in Phase 2. Participants opened the link in Prolific to view the survey in Qualtrics. Once they read the letter of information and consented, they were asked to self-classify their weight again, in case their self-described weight no longer matched with the information they had provided Prolific when they initially set up their profile. If the participant selected "underweight" or "average weight," the survey ended. If they selected "a little overweight," "very overweight," or "obese," they were able to continue with the survey. Participants received the 40-item FMS, WBIS-2F, DASS-21, TSDS, RSES, and PANAS, presented in a randomized order. This was followed by a

demographic questionnaire. Participants were compensated £1.88GBP/$3.09 CAD. Participants provided their Prolific ID to receive compensation, which was then used to match their responses at Time 1 and Time 2.

6.2 Results

6.2.1 Preliminary Analyses and Descriptive Statistics

I first examined the amount of missing data. The amount of missing data for the FMS was very low (0.15%) so I did not impute any missing values. Missing data for the other measures was also extremely low: WBIS-2F (0.04%), DASS-21 (0.05%), TSDS (0.14%) RSES (0.05%), and PA (0.10%). I then ran Little's MCAR test on all the included measures. Data was missing completely at random for the FMS (χ^2 (189) = 169.71, p = .84), WBIS-2F (χ^2 (12) = 9.08, p = .70), DASS-21 (χ^2 (40) = 40.17, p = .46), TSDS (χ^2 (79) = 65.07, p = .87), RSES (χ^2 (18) = 11.96, p = .85), and PA (χ^2 (9) = 10.24, p = .33). The NA subscale had no missing data. I then examined the amount of skewness and kurtosis for all variables. Each measure demonstrated levels of skewness and kurtosis within the acceptable range. See Table 14 for the means of all measures and their internal reliability.

Though the sample size was not sufficient to test reliably for gender or racial group differences on the FMS, I calculated the mean FMS total and subscale scores for the different gender and racial groups for descriptive purposes (see Table 15). In this sample, Asian and multiracial participants received higher overall FMS scores than White and Black participants. Women's overall FMS scores were higher than men's, and an independent t-test indicated that this difference was significant, t(192) = 3.30, p < .001, d = .47, 95% CI [.19, .76]. Significant differences were specifically found for the Indirect Experiences subscale, t(192) = 4.20, p < .001,

d = .60, 95% CI [.31, 89], and Clothing subscale, *t*(192) = 3.78, *p* < .001, *d* = .54, 95% CI [.25, .83].

Table 15.
FMS Means across Racial and Gender Groups from Study 5

	Group *n*	FMS Mean (*SD*)	Direct Mean (*SD*)	Indirect Mean (*SD*)	Clothing Mean (*SD*)	Weight Loss Mean (*SD*)
White	80	2.39 (.64)	1.59 (.58)	3.04 (.68)	2.55 (1.19)	2.40 (.80)
Asian	53	2.54 (.70)	1.78 (.75)	2.54 (1.14)	2.54 (1.14)	2.68 (.93)
Black	29	2.38 (.68)	1.49 (.53)	2.50 (1.04)	2.50 (1.05)	2.39 (.97)
Multiracial	26	2.60 (.89)	1.75 (.94)	3.24 (.85)	2.83 (1.26)	2.63 (.99)
Women	96	2.62 (.69)	1.70 (.71)	3.30 (.73)	2.85 (1.11)	2.65 (.90)
Men	98	2.29 (.67)	1.58 (.65)	2.89 (.62)	2.25 (1.13)	2.38 (.88)

6.2.1 Test-Retest Reliability

To assess test-retest reliability, I examined the bivariate correlations between the Time 1 FMS total and subscales scores and the Time 2 scores four weeks later. The overall FMS scores at Time 1 was positively and significantly correlated with the overall FMS scores at Time 2 (*r* = .87, *p* < .01). Each of the FMS subscale scores at Time 1 and Time 2 were also positively and significantly correlated: Direct Experiences (*r* = .82, *p* < .01), Indirect Experiences (*r* = .78, *p* < .01), Clothing (*r* = .82, *p* < .01), and Weight Loss Prescriptions (*r* = .84, *p* < .01). These results demonstrate good four-week test-retest reliability.

6.2.2 Convergent and Discriminant Validity

To assess convergent and discriminant validity of the FMS, I examined the bivariate correlations between the FMS and measures of internalized weight stigma (WBIS-2F), depression, anxiety, and stress (DASS-21), trauma symptoms of discrimination (TSDS) self-esteem (RSES), and positive and negative affect (PANAS) (see Table 14). The FMS was

significantly and positively correlated with weight-related distress ($r = .48$, $p < .01$), weight-related self-devaluation ($r = .39$, $p < .01$), depression ($r = .41$, $p < .01$), anxiety ($r = .56$, $p < .01$), stress ($r = .49$, $p < .01$), the TSDS ($r = .64$, $p < .01$), and negative affect ($r = .47$, $p < .01$). The FMS was negatively significantly correlated with self-esteem ($r = -.38$, $p < .01$). and positive affect ($r = -.17$, $p < .05$). Thus, the FMS again moderately correlated with internalized weight stigma, as well as depression, anxiety, stress, and negative affect, supporting convergent validity. The FMS also weakly negatively correlated with self-esteem and positive affect, supporting its discriminant validity.

6.2.3 Incremental Validity

To again examine the incremental validity of the FMS, I ran a hierarchical linear regression with depression, anxiety, and stress (assessed with the DASS-21 scale) regressed on internalized weight stigma and fat microaggressions. I predicted that experiences of fat microaggressions would account for additional variance in the DASS-21 beyond internalized weight stigma. I entered the WBIS-2F Distress subscale and the WBIS-2F Self-Devaluation subscale at Step 1 and each of the four FMS subscales at Step 2. At Step 1, Distress and Self-Devaluation were significant predictors of Depression. When the FMS subscales were added at Step 2, the WBIS-2F Distress subscale remained a significant predictor, and the FMS Direct subscale was also a significant predictor, with the FMS Direct subscale accounting for 1.7% of the variance in Depression beyond the WBIS-2F. I then ran the same regression, with Anxiety as the dependent variable. At Step 1, Distress and Self-Devaluation were again significant predictors.

Table 14.

Zero-order correlations between FMS and related constructs from Study 5

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. FMS	-														
2. Direct	.87**	-													
3. Indirect	.81**	.59**	-												
4. Clothing	.81**	.67**	.49**	-											
5. Weight loss	.90**	.74**	.63**	.65**	-										
6. WBIS-2F	.50**	.48**	.36**	.41**	.44**	-									
7. Distress	.48**	.42**	.38**	.40**	.43**	.93**	-								
8. Self-devaluation	.39**	.45**	.24**	.32**	.34**	.85**	.60**	-							
9. Depression	.41**	.42**	.33**	.33**	.32**	.56**	.54**	.45**	-						
10. Anxiety	.56**	.55**	.44**	.42**	.49**	.49**	.43**	.44**	.74**	-					
11. Stress	.49**	.50**	.42**	.31**	.43**	.53**	.50**	.44**	.82**	.80**	-				
12. TSDS	.64**	.61**	.53**	.44**	.58**	.56**	.56**	.42**	.70**	.71**	.71**	-			
13. Self-esteem	-.38**	-.38**	-.29**	-.33**	-.31**	-.77**	-.74**	-.62**	.76**	-.57**	-.65**	-.65**	-		
14. Positive affect	-.17*	-.18*	-.11	-.21**	-.10	-.48**	-.47**	-.37**	-.59**	-.30**	-.40**	-.32**	.64**	-	
15. Negative affect	.47**	.46**	.41**	.31**	.40**	.50**	.44**	.46**	.76**	.78**	.83**	.66**	-.62**	-.42**	-
Alpha	.97	.93	.92	.94	.94	.87	.83	.77	.94	.87	.90	.98	.94	.93	.93
Mean	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
SD	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

Note. ** Correlation is significant at the .01 level (two-tailed). * Correlation is significant at the .05 level (two-tailed). FMS = Fat Microaggressions Scale. WBIS-2F = Two-Factor Weight Bias Internalization Scale. TSDS = Trauma Symptoms from Discrimination Scale.

At Step 2, the WBIS-2F Self-Devaluation subscale and the FMS Direct subscale were significant predictors of anxiety, with the FMS Direct subscale accounting for 2.6% of unique variance in anxiety, beyond the WBIS-2F. Finally, I ran the same regression with Stress as the dependent variable. Both WBIS-2F subscales were significant predictors at Step 1. At Step 2, the WBIS-2F Distress subscale and FMS Direct subscale were significant predictors, with the FMS Direct subscale accounting for 2.9% of the variance in Stress. Table 16 presents the full regression results.

I conducted a second hierarchical regression with traumatic symptoms due to experiences of discrimination (the TSDS) regressed on the same predictors. I predicted that the FMS would account for additional unique variance in the TSDS beyond the Distress subscale of the WBIS-2F. I included the Distress subscale specifically because it measures negative feelings resulting from weight status (including how people treat you because of your weight), rather than the Self-Devaluation subscale, which measures internal self-worth. At Step 1, I entered the WBIS-2F Distress subscale and the FMS subscales at Step 2. The WBIS-2F Distress scale was a significant predictor of TSDS at Step 1. The Direct, Indirect, and Weight Loss subscales were significant predictors at Step 2, and the WBIS-2F Distress subscale had weakened though was still significant. The Direct subscale accounted for 3.6%, the Indirect subscale accounted for 1.4%, and the Weight Loss Prescriptions subscale 1.2% of variance in the TSDS above WBIS-2F Distress.

Table 16.

Test of Incremental Validity from Study 5

	β	*t*	*adj* R^2	ΔR^2	ΔF	sr^2
Criterion: Depression						
Step 1			.31	.31	44.07***	
WBIS-2F Distress	.42	5.58***				.109
WBIS-2F Self-Devaluation	.20	2.70**				.026
Step 2			.33	.04	2.60*	
WBIS-2F Distress	.37	4.72***				.078
WBIS-2F Self-Devaluation	.14	1.82				.012
FMS-Direct	.23	2.27*				.017
FMS-Indirect	.07	0.91				.003
FMS-Clothing	.02	0.25				.000
FMS-Weight Loss Prescriptions	-.12	-1.21				-.005
Criterion: Anxiety						
Step 1			.23	.24	30.28***	
WBIS-2F Distress	.26	3.33***				.044
WBIS-2F Self-Devaluation	.29	3.63***				.053
Step 2			.37	.15	11.19***	
WBIS-2F Distress	.12	1.55				.008
WBIS-2F Self-Devaluation	.18	2.44*				.020
FMS-Direct	.27	2.78**				.026
FMS-Indirect	.14	1.83				.010
FMS-Clothing	.02	0.23				.000
FMS-Weight Loss Prescriptions	.07	0.74				.002
Criterion: Stress						
Step 1			.27	.28	37.55***	
WBIS-2F Distress	.36	4.76***				.084

WBIS-2F Self-Devaluation	.23	2.94**				.032
Step 2			.36	.10	7.18***	
WBIS-2F Distress	.28	3.57***				.044
WBIS-2F Self-Devaluation	.14	1.84				.012
FMS-Direct	.28	2.89**				.029
FMS-Indirect	.13	1.74				.010
FMS-Clothing	-.13	-1.64				-.008
FMS-Weight Loss Prescriptions	.06	0.60				.001
Criterion: TSDS						
Step 1			.31	.32	89.42***	
WBIS-2F Distress	.56	9.46***				.314
Step 2			.50	.20	19.79***	
WBIS-2F Distress	.34	5.90***				.090
FMS-Direct	.31	3.71***				.036
FMS-Indirect	.16	2.33*				.014
FMS-Clothing	-.10	-1.35				-.005
FMS-Weight Loss Prescriptions	.18	2.10*				.012

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$. WBIS-2F = Two-Factor Weight Bias Internalization Scale. FMS = Fat Microaggressions Scale.

6.3 Discussion

In this study, I demonstrated test-retest reliability of the FMS in a sub-sample of adults four weeks after they had first completed the FMS. I also provided further evidence of the measure's convergent and discriminant validity through bivariate correlations with measures of internalized weight stigma, depression, stress, anxiety, self-esteem, trauma symptoms of discrimination, and positive and negative affect. Additional evidence of incremental validity was

also provided through hierarchical regressions demonstrating that the FMS predicts unique variance in measures of mental health beyond internalized weight stigma. In particular, the Direct Experiences subscale of the FMS was a significant predictor of the DASS-21 subscales, above the WBIS-2F. The Direct Experiences, Indirect Experiences, and Weight Loss Prescriptions subscales explained unique variance in the trauma symptoms from discrimination, but not the Clothing subscale. Additionally, an exploratory analysis indicated that Asian and multiracial people scored higher on the FMS than White and Black people, though this is in contrast to the results in Study 3, which found very similar FMS scores between racial groups, though scores were highest among White participants. Initial evidence also suggests that women experience more frequent fat microaggressions than men, particularly on the Indirect Microaggressions and Clothing subscales. These patterns may be explored further in future research. Overall, the FMS was found to have consistent responses over a four-week period, demonstrating test-retest reliability. The associations found between the FMS and measures of psychological health indicate a negative association between experiencing fat microaggressions and mental health, as well as providing further evidence of the FMS as a valid measure.

Chapter 7

7 Conclusion

7.1 Summary of Studies and Their Contribution

Munro (2017) called for the microaggression framework to be applied to weight stigma. Others have qualitatively written about fat microaggressions (Akoury et al., 2019; Hunt & Rhodes, Munro, 2017; Owen, 2012; Reiheld, 2020); however, fat microaggressions have yet to be quantitatively measured. The primary aim of this research was to develop and validate a quantitative measure that would allow researchers to assess experiences of weight-related microaggressions. I accomplished this overarching aim through five studies. This scale will allow future quantitative research to assess experiences of fat microaggressions and examine their associations with other variables.

In Study 1, I compiled an extensive list of potential items for the Fat Microaggressions Scale from three separate sources. The first source was previous measures of experienced weight stigma. I conducted an updated systematic review of weight stigma scales and aggregated items from DePierre & Puhl's (2012) review, providing a total of 391 items. For the second source, I searched for qualitative studies that examined experiences of fat microaggressions and converted the experiences into 23 scale items. Finally, tweets using the hashtag #FatMicroaggressions were reviewed and converted into items, resulting in 95 additional items. All 509 items were categorized by three independent coders into one of 14 created categories of fat microaggressions: Assumptions, Concern Trolling, Desirability, Devaluation, Diet and Fitness, Employment, Environmental, Fat Talk, Fashion, Health, Humor. Media, Public Property, and Research. Items were then reviewed for relevance and redundancy, and 197 items were selected

across the various dimensions to form the preliminary item pool for the creation and development of the FMS.

In Study 2, I conducted a Delphi review among fat activists and fat studies scholars with lived experience to narrow down the item pool and receive feedback on the items. I sent the list of 197 items to potential reviewers who were asked to rate how important each item was for inclusion in the scale. Reviewers were also able to provide comments and suggestions for new items. Ten expert reviewers agreed to evaluate the items and completed the survey. Thirty-three items were removed for either being deemed unimportant via the ratings, or for redundancy. The suggestions from reviewers also resulted in the addition of 13 items. The preliminary version of the FMS contained 177 items, ready to be subject to an exploratory factor analysis.

In Study 3, I conducted an exploratory factory analysis in a large online sample of higher-weight adults, recruited from Prolific. The scree plot and a series of exploratory factor analyses indicated a four-factor structure. I determined each of these factors to represent Direct Experiences, Indirect Experiences, Clothing, and Weight Loss Prescriptions. I also reduced the number of items in the scale by examining their mean, communality, outlier correlations, and anti-image off-diagonal correlations. The final version of the FMS contained 40 items.

In Study 4, I conducted a confirmatory factor analysis in a new online sample of higher-weight adults and provided initial evidence of construct validity. The confirmatory factor analysis demonstrated that the four-factor structure was a good fit of the model to the data. The FMS also showed positive correlations with another measure of experienced weight stigma, perceived stress, and internalized weight stigma. It negatively correlated with self-rated health. Evidence of incremental validity was demonstrated through hierarchical linear regression. The FMS accounted for additional unique variance in avoidance of activities and perceived stress,

beyond a brief version of a commonly used weight stigma scale. Evidence of known-groups validity was demonstrated by confirming that those who self-classified as "obese" obtained higher scores on the FMS than those who self-classified as "very overweight," and those in the "very overweight" group scored higher than those in the "a little overweight group."

In Study 5, I examined the test-retest validity of the FMS, as well as provided additional evidence of construct validity. A subset of participants from Study 4 were asked to complete the FMS four weeks after the initial assessment. The FMS and its subscales demonstrated good test-retest validity. Positive correlations were also found between the FMS and internalized weight stigma, depression, anxiety, stress, trauma symptoms of discrimination, and negative affect. The FMS negatively correlated with self-esteem and positive affect.

7.2 Considerations for an Initial Framework of Fat Microaggressions

The four-factor structure of the scale offers an initial framework for categorizing fat microaggressions. The structure that appeared with the FMS appears to cluster the microaggressions according to the distinct way in which they were communicated to the higher weight individual, as opposed to the context, source, or type of microaggression.

The content reflected in the Direct Experiences factor includes experiences that directly target an individual (e.g., receiving a dirty look, being called a name across a variety of contexts and sources (e.g., grocery store, at the gym, on social media). Experiences reflecting more structural forms of weight stigma, such as not being able to fit comfortably through turnstiles or in seats, also loaded onto this factor. More subtle, yet still direct experiences, included someone acting surprised that a higher-weight person has a romantic partner, which may more readily be dismissed or be missed as a microaggression yet is clear in its implication that fat people would be undesirable or undeserving of love. At first glance, it may seem that the experiences listed in

this subscale do not have much in common, and it was unexpected that both interpersonal and structural items were grouped together. However, despite the variation among the described experiences, they each carry an aspect of humiliation and/or invalidation that was directly communicated in an everyday context to a higher weight person. This constellation of direct experiences was the strongest factor of the scale and underscores the relevance and meaningfulness of these indignities being directly communicated to higher weight people.

The content reflected in the Indirect Experiences factor includes fat microaggressions that are experienced vicariously by observing them being communicated to others or in more generalized 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. Similar to the Direct Experiences factor, the items on the Indirect Experiences factor differ in their context, source, and form, but clustered together around the route in which they were communicated. This factor underscores the relevance and meaningfulness of not only being the direct target of fat microaggressions, but also observing these everyday indignities being perpetrated against other people, or being exposed to such treatment in more generalized social forums (e.g., on social media or in the news), or hearing other people of all sizes make comments about their own weight, dieting, and "feeing fat," in the experience of fat microaggressions for higher weight people.

The Clothing factor represents another way in which higher weight people experience fat microaggressions, which has been noted both anecdotally and in past research (Gerend et al., 2021; Owen, 2012). These items captured the experiences of higher weight people when trying

to find clothing to fit larger bodies. Even clothing that advertises itself as “one size fits all” or “inclusive” may still exclude higher-weight people despite the promise that it will fit all bodies. Where larger clothing sizes are available, the clothes are often more expensive or less stylish, and thus either less desirable or still unavailable. Though I 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 the observed factor structure renders more prominent how the lack of access and availability of clothes, especially stylish clothes, to fit higher weight individuals communicates to them that their bodies are not valid, legitimate or deserving of clothing at their larger size: Clothing does not exist for bodies that should not exist. The content reflected in this factor represents the underappreciated everyday indignity and penalty experienced by higher weight individuals in merely trying to find clothes to fit them.

Finally, the Weight Loss Prescriptions factor represents the various ways that fat microaggressions are communicated to higher weight people through prescribing and advising dieting, exercise, and the pursuit of weight loss to them. In reviewing the items, it is apparent that the content of this factor is driven by a commonly held belief that higher-weight people should, could, and want to lose weight. Similar to other factors, the context, source, and form of the specific microaggression varied, with the items instead clustering around the communication of the microaggressions through telling higher weight people what they should be eating, what diets to try, that they need to lose weight to be healthy, and how to exercise more. These items also include experiences that might seem encouraging and/or out of genuine concern, such as communicating fears they will get diabetes if they do not lose weight or that they would look more attractive by losing weight. Another notable feature of the items in this factor (although it

pertains to other factors as well) is that the prescriptions and "advice" is unsolicited and just as likely to come from strangers as friends and family. On the whole, fat microaggressions communicated through weight loss prescriptions, whether they have a positive veneer or not, represent another way that people in larger bodies are treated as not acceptable or desirable the way that they are, and told they need to be fixed. The intrusiveness and pervasiveness of these prescriptions further underscores the everyday indignity, boundary violation, and humiliation of these experiences for higher weight individuals.

7.3 Comparisons with Sue et al.'s (2007) Microaggression Framework

Importantly, the structure of the FMS did not directly map onto Sue et al.'s (2007) framework, which was initially developed for racial microaggressions. Departures from the initial framework have also been seen in the development of other quantitative measures of microaggressions, including ableist and LGBTQ microaggressions (Conover et al., 2017; Nadal, 2019). These findings are not necessarily a challenge to Sue et al.'s (2007) work but do suggest a revisiting of the framework in the context of fat microaggressions, which have distinct qualities compared to other microaggressions. For example, people are generally comfortable blatantly expressing their anti-fat beliefs, with little to no opposition (Jeon et a., 2018; Vartanian et al., 2014). Anti-fat attitudes are so deeply entrenched in society that it is not questioned when a character on a television show dons a fat suit, reflecting a collection of anti-fat stereotypes, and is ridiculed ruthlessly. Fat microaggressions and anti-fat attitudes are often justified by the belief that fat people are responsible for their higher weight, and that they should be shamed for being fat. Another unique aspect of fat microaggressions is who they harm. While higher-weight people are obviously the most harmed by fat microaggressions, as Reiheld (2020) notes, fat microaggressions not only work to marginalize fat people, but harm people who *may* become fat.

Reiheld (2020) labels these as “cautionary microaggressions,” as they rely on a person’s potential to become part of a stigmatized group. Fat jokes in movies or unsolicited comments on what a person is eating also become internalized by those who are not currently fat, instilling a fear of becoming fat. This is not to say that these two groups are harmed equally by fat microaggressions, as fat microaggressions uphold oppressive systems against fat people. However, fat microaggressions are unique in that they have the potential to harm everyone, and not only those who are currently members of the marginalized group.

What I observed with the FMS is that Sue et al.’s (2007) three microaggression categories (i.e., microassaults, microinsults, microinvalidations) are represented across the four factors. Microassaults are seen in three of the four FMS factors: Someone laughing at a higher-weight person at the beach or pool reflects an item on the Direct Experiences factor, fat people being shamed online reflects an item on the Indirect Experiences factor, and an unsolicited negative comment on what someone is eating reflects an item on the Weight Loss Prescriptions factor. Acting surprised that a higher-weight person has a romantic partner (Direct Experiences), a thin friend calling themselves fat (Indirect Experiences), and someone saying, “good for you!” after seeing someone exercise (Weight Loss Prescriptions) may all be classified as microinsults. Finally, microinvalidations are seen in both the Clothing factor (e.g., not being able to find clothes that fit) and the Weight Loss Prescriptions factor (e.g., people saying “all you really need is a little willpower).

Sue et al. (2007) described microassault as the often-conscious interactions, while microinsults and microinvalidations are typically unintentional. However, the definition of microaggressions includes that they are largely unintentional, marking the intentional microaggressions as deviations from a typical microaggression. This point may lead to ambiguity

and possibly contributes to the conversation that intentional acts of discrimination cannot be classified as microaggressions, as well as microaggression research largely focusing on unintentional microaggressions. However, many items on the FMS scale are intentional or conscious actions (e.g., calling someone a name, posting something mean online, telling someone they need to go on a diet, etc.). As people are often comfortable intentionally or consciously expressing their anti-fat beliefs, deviating from the 'unintentional' microassault categorization is perhaps necessary for the conceptualization of fat microaggressions.

Further, Friedlaender and Ivy (2020) argue that the current conceptualization of microassaults makes them difficult to differentiate from macroaggressions. They believe microassaults should be defined by the *desire-to-harm* and *failure-to-disavow-harm* models, meaning that the perpetrator consciously intends to harm yet believes this harm is justified (Friedlaender & Ivy, 2020). In the case of fat microaggressions, these intentional acts are often justified by the excuse that it's simply "tough love," that they are "trying to help," or that fat shaming is necessary to get someone to lose weight, because as everyone knows, "fat is bad." This attributional ambiguity leaves the higher weight person wondering if the perpetrator intended harm or truly was trying to help and allows perpetrators to continue to intentionally harm higher-weight people without condemnation from others. The refinement of our definitions of intentional microaggressions from Friedlaender and Ivy (2020) are especially pertinent for fat microaggressions.

7.4 Future Research and Limitations

Here I consider broader limitations of this research. One limitation of the studies is the diversity of the sample. While I engaged in efforts to target different racial groups on Prolific, the samples of participants in Study 4 and 5 were less racially diverse than Study 3 and had a

higher percentage of White participants (about 40%). Additionally, most of the samples were heterosexual, cisgender, and on the lower end of the higher-weight 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 higher weight participants in higher education noted that nearly all gay, lesbian, and gender nonconforming participants experienced greater discrimination regarding their clothing (Hunt & Rhodes, 2018). One lesbian woman explained how her supervisor would criticize her clothing and appearance, yet she was wearing the same outfits as her thin, male colleagues (Hunt & Rhodes, 2018). Similarly, heavier people among higher-weight people experience microaggressions more frequently. Therefore, including weight diversity across the higher-weight spectrum in research is also important to ensure that those who may be most harmed are not excluded.

The 40-item measure is also limited in its coverage of content. While the four factors formed a coherent measure, they do not represent an exhaustive list of fat microaggressive experiences. While I needed to eliminate items to produce a measure that could be administered feasibly in research, it is the case that many items that were removed are certainly relevant to the experience of fat microaggressions. For example, many of the healthcare related items, such as doctors blaming unrelated physical issues on their patient's weight, did not load above .4 onto a factor during the EFA stage, and were subsequently removed; however, these experiences represent harmful fat microaggressions, though not measured by the FMS. 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. Additionally, while I made systematic decisions throughout the series of EFAs

to remove items, it is possible that others would have made different choices, resulting in a somewhat different final scale.

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. The subscales of the FMS may also be further examined to determine any differentiating effects between the types of microaggressions and mental health consequences. Additionally, future research may inquire how the same interpersonal microaggressions may differ depending on the source (e.g., family member vs. stranger). Longitudinal studies utilizing the scale are another avenue that could be explored to better understand when and where these microaggressions occur and their impacts.

Fat microaggression research should also further examine the intersections of weight with other marginalized identities. Qualitative studies, such as the one by Hunt & 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 (Lewis & Neville, 2015) and LGBT racial microaggressions (Balsam et al., 2011). A future scale may focus on intersectional fat microaggressions. While research on weight stigma should be centered on the experiences of higher-weight people, future research may also examine the role of fat microaggressions in the lives of people who are not (yet) fat, and how that plays into the role of fear of becoming fat.

Another research direction may focus on the motivations behind perpetrating fat microaggressions, as well as independent observers' judgments of them, such as perceived

offense, blameworthiness, intentionality, and emotional distress. Finally, the associations found between the FMS and negative outcomes highlight the need for the development of future interventions to prevent the perpetration of fat microaggressions, such as addressing verbal comments and physical barriers.

7.5 Conclusion

Overall, this program of research produced a comprehensive scale derived from the lived experience of higher-weight people to measure fat microaggressions in quantitative research. The development of the FMS provided an initial framework to categorize fat microaggressions and demonstrated some of the negative health and behavioral outcomes associated with them. The FMS may be used to further advance the study of fat microaggressions as a form of weight prejudice and discrimination, and highlight the need for fat microaggressions to be included in the larger fields of microaggression and weight stigma research.

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Appendices

Appendix A: Supplementary Tables

Table 2

Self-report Measures of Experiences of Weight Stigma Published After 2012

Author / Year	Name of measure	Sample	Number of Items	Questions / Subscales	Sample Item	Scoring	Original alpha
Major et al., 2020	Adapted Everyday Discrimination Scale	National adult sample; N = 485; age: 18-77, M = 35.1; 78% White; 53% male; BMI: 15.87-65.22, M = 26.76	8	Adapted from the Everyday Discrimination Scale (EDS; Williams et al., 1997), survey assesses the frequency of experiences of interpersonal weight-based discrimination	People act as though you are unattractive or romantically unappealing because of your weight	7-point scale (0 = never to 6 = daily).	α = .95
Araiza and Wellman, 2017	Perceived Experiences with Weight Discrimination	Undergraduate sample; N = 84; age: 18-52, M = 21.42; 68% Hispanic/Latino American; 90% female; BMI: 19.37-60.10, M = 32.36	5	Using items similar to those from Wellman et al. (2018), survey assesses perceived experiences with weight discrimination.	I personally have been a victim of weight discrimination	7-point scale (1 = strongly disagree to 7 = strongly agree).	α = .89
Wellman et al., 2018	Perceived Weight Stigma	2 undergraduate samples; N = 1) 189, 2) = 72; age: 1) M = 21.35, 2) = 18.16; 1) 66% Latino, 2) 95% White; 1) 81% female, 2) 100% female; BMI: calculated but not reported	4 (of 5)	Survey assesses the extent to which individuals perceive they are stigmatized based on their weight	I feel that people avoid me in social situations because of my weight	7-point scale (0 = strongly disagree to 6 = strongly agree)	α = .81

Schvey et al., 2018	Gym Survey	Sample of higher-weight adults who belonged to a gym; N = 389; age: M = 32.98; 53% White; 75% female; BMI: M = 35.59	4 (of 13)	Survey assesses participant's satisfaction with their gym and the extent of stigmatizing experiences at their gym. Three subscales: Self-Consciousness at the Gym, Negative Attitudes Towards the Gym, and Stigma at the Gym.	The equipment (e.g., stationary bicycle, elliptical machine) at my gym feels to small for me	7-point scale (1 = strongly disagree to 7 = strongly agree).	α = .83 (Stigma at the Gym)
Salwen and Hymowitz, 2015	Weight-Related Abuse Questionnaire	Undergraduate sample; N = 382; age: M = 19.26; 50% White; 57% female; BMI: 15.81-48.91, M = 24.91. Sample of pre-bariatric patients; N = 59; age: 19-64, M = 40.55; 72% White; 83% female; BMI: 34.72-68.35, M = 44.31	15	Survey assesses the frequency of negative weight-related events before the age of 21. Two-part questions assess both frequency and emotional impact of the abuse. Two subscales: Verbal Abuse and Physical Abuse	Someone embarrassed you in front of others because of your weight	7-point scale (0 = never to 6 = more than 20 times per year)	α = .93 (Verbal Abuse), α = 89 (Physical Abuse)
Puhl et al., 2020	Weight Stigma in School or Work Environment	Sample of students with diverse racial and socio-economic backgrounds, followed into adulthood; N = 1253; age: M = 22.1; 53.5% female; 28.9% Black; 39.2% low SES; BMI: 42.2% 18.5 < BMI < 25	5	Survey assesses the extent to which individuals perceive they are stigmatized based on their weight specifically in their work or educational setting	People at work or school have made comments about my body shape or size	5-point scale (1 = strongly disagree to 5 = not applicable)	α = .72
Lin et al., 2019	Perceived Weight Stigma Questionnaire (PWS)	Sample of university students in Hong Kong or Taiwan; N = 707; age: M = 20.27; 53.9% female; 100% Asian; BMI: M = 21.04	10	Adapted from Schafer & Ferraro (2011) and the EDS (Williams et al., 1997), survey assesses the extent to which individuals perceive they are stigmatized based on their weight	People act as if they are afraid of you	Dichotomous scale (1 = yes, 0 = no)	α = .84

Jackson, Beeken, and Wardle, 2014	Perceived Weight Discrimination	National English sample of adults over 50; N = 150; age: M = 61.6; 65% female; BMI: M = 35.46	5	Adapted from the MIDUS and the Health and Retirement Study, survey assesses the frequency of experiences of weight discrimination	You receive poorer service or treatment than other people from doctors or hospitals	6-point scale (0 = never, 5 = almost every day)	N/A
Vartanian, 2015	Stigmatizing Situations Inventory - Brief	7 samples; N = 1089; age: M = 20.1 - 37.0; 57% women; 77% White; BMI: M = 30.52 - 36.00	10	Survey adapted from the SSI (Myers & Rosen, 1999) to provide a brief assessment of frequency of weight stigmatizing experiences	Having strangers suggest diets to you	10-point scale (0 = never to 9 = daily)	α = .84 - .92
Magalleres, 2017	Multi-dimensional Scale of Perceived Discrimination (MSPD)	Sample of higher-weight patients in a Clinical Nutrition Unit at a hospital in Spain; N = 170; age: 20-76, M = 46.96; 65% male; BMI: M = 42.75	10	Adapted from the Multidimensional Scale of Perceived Discrimination (Molero et al., 2013), survey assesses the extent to which individuals perceive they are stigmatized both blatantly and subtly based on their weight. Two subscales: Blatant and subtle	Even though there is no express rejection, people treat me differently when they see I am obese	5-point scale	α = .83 (Blatant), α = .91 (Subtle)
Luck-Sikorski & Riedel-Heller, 2017	Adapted Lifetime Discrimination Scale	National German adult sample; N = 1000; age: M = 56.4; 55% male; BMI: M = 34.3	10	Adapted from the Lifetime Discrimination Scale used in the MIDUS, survey assesses perceived experiences with weight discrimination	You were prevented from leisure activities because of your weight	Dichotomous scale (Yes or no)	N/A
Duarte & Pinto-Gouveia, 2016	The Body Image Victimization Experiences Scale	2 nonclinical samples of Portuguese women, and 1 sample of women with Binge Eating Disorder; N = 1) 632, 2) 545, 3) 73; age: 1) 18-60, M = 28.22, 2) 18-60, M = 28.97, 3) 19-59, M	12	Retrospectively assesses the frequency and impact of victimization from peers and parents during childhood pertaining to body image. Two subscales: Peer and parent	At school I was left out/excluded because of my body shape	5-point scale (1 = never to 5 = very frequently)	α = .92

		=38.22; BMI: 1) M = 22.66, 2) M = 23.09, 3) M = 34.41					
Raves et al., 2016	Weight-Related Stigma in Healthcare (HCWS)	Sample of postoperative bariatric surgery patients; N = 298; age: 23-80, M = 52.7; predominantly female and White	6	Combining items from the Interpersonal Sources of Weight Stigma tool (Puhl & Brownell, 2006) and from the SSI (Myers and Rosen, 1999), survey assesses frequency of weight stigma in healthcare settings.	Having a doctor recommend a diet even if you did not come in to discuss weight loss	4-point scale (0 = never to 3 = several times)	α = .84
Puhl, Peterson, & Luedicke, 2013	Adolescent weight-based victimization	Sample of adolescents enrolled in weight loss programs; N = 361; age: 14-18, M = 15.8; 44% male and 40% female; 71% White	22	Survey assesses frequency of weight- based victimization in adolescents. Four subscales: Verbal teasing, relational victimization, cyberbullying, and physical aggression	How often during the past year has someone posted something mean or embarrassing about you online?	5-point scale (1 = never to 5 = very often)	α = .94
Rafeh & Hanif, 2019	Perceived Weight Stigmatization Scale (PWSS)	Sample of university students in Pakistan; N = 300; 54% female; BMI: > 25	43	Survey assesses experiences of weight stigma and its impact. Three subscales: Self-perception, perceived social rejection, and perceived impact	I am made fun of when I take part in sports	5-point scale (1 = strongly disagree to 5 = strongly agree)	α = .96
Schvey et al., 2017	The Experiences and Sources of Weight Stigma Questionnaire [for military populations]	Sample of active-duty military personnel enrolled in a weight gain prevention program; N = 119; age: M = 31.28; 70% male; 67% White; BMI: M = 29.84	26	Survey assesses the frequency of both military-specific forms of weight stigma and general weight stigma. Two subscales: General and Military	Being made fun of/mocked during drills or training	5-point scale (1 = never to 5 = very often)	α = .95

Rieger et al., 2021	Weight-Related Interactions Scale (WRIS) (Criticism Subscale)	Sample of higher weight adults; N = 736; age: M = 32.52; 50.82% male; 28.67% Western European, 23.91% Asian; BMI: M = 30.76	11 (of 41)	Survey assesses frequency of interactions with others related to eating, physical activity, and weight. Three subscales: Criticism, Minimization, Collaboration	Provided weight loss advice when I did not specifically request it	5-point scale (1 = never to 5 = very often)	α = .91 (Criticism subscale)
Ferrante et al., 2016	Stigma Situations in Healthcare (SSHC)	Sample of higher weight women at Federally Qualified Health Centers; age: M = 47.5; 77.2% Black; BMI: M = 39.4	20	Survey assesses perceived experiences with weight stigma in the context of health care	When you are weighed on a scale, the medical staff makes negative comments about your weight	4-point scale (0 = never to 3 = multiple times)	α = .92

Appendix B: Research Ethics Approval – Study 3 and 4

Western Research

Date: 13 December 2021

To: Dr. Rachel Calogero

Project ID: 119724

Study Title: Development and Validation of the Fat Microaggressions Scale

Short Title: FMS EFA and CFA

Application Type: NMREB Initial Application

Review Type: Delegated

Full Board Reporting Date: 14/Jan/2022

Date Approval Issued: 13/Dec/2021 09:53

REB Approval Expiry Date: 13/Dec/2022

Dear Dr. Rachel Calogero

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. **All other required institutional approvals and mandated training must also be obtained prior to the conduct of the study.**

Documents Approved:

Document Name	Document Type	Document Date	Document Version
Study 1 Recruitment_FMS EFA	Recruitment Materials		
Study 2 Recruitment_FMS CFA	Recruitment Materials		
Study 1 LOI_FMS EFA	Implied Consent/Assent	09/Dec/2021	2
Study 2 LOI_FMS CFA	Implied Consent/Assent	09/Dec/2021	2
Study 2 Debrief	Debriefing document	09/Dec/2021	2
Study 1 Debrief	Debriefing document	09/Dec/2021	2
Study 1 Qualtrics survey	Online Survey		
Study 2 Qualtrics Survey	Online Survey		

No deviations from, or changes to the protocol should be initiated without prior written approval from the NMREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the trial.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Ms. Katelyn Harris , Research Ethics Officer on behalf of Dr. Randal Graham, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix C: Letter of Information – Study 3

Project Title: Weight-Related Experiences in Everyday Life

Researchers:
Rachel Calogero, PhD (Principal Investigator)
Email: [redacted]

Megan Lindloff, Masters Student, Co-Investigator
Email: [redacted]

Angela Meadows, PhD, Co-Investigator
Email: [redacted]

1. Invitation to Participate
You are invited to participate in a research study that will be conducted by Megan Lindloff, Masters Student, from the Department of Psychology at Western University, under the supervision of Dr. Rachel Calogero, Ph.D., from the Department of Psychology at Western University and Dr. Angela Meadows, Ph.D., from the Department of Psychology at the University of Essex.

2. Purpose of this Letter
The purpose of this letter is to provide you with information in order to allow you to make an informed decision regarding participation in this research.

3. Purpose of this Study
We are interested in people's weight-related experiences in their everyday life.

4. Inclusion Criteria
Participants will need to self-identify as 'overweight,' 'obese,' 'fat,' or 'heavier,' etc., speak English fluently, be aged at least 18 years old, and have internet access.

5. Exclusion Criteria
Participants will be excluded from the study if they do not meet the criteria listed above.

6. Study Procedures
Participants will read a letter of information and indicate that they have read and agree to the study procedures. They will then be asked to complete a questionnaire about their weight-related experiences, followed by a standard demographic survey.

7. Possible Risks and Harms
If you consent to participate, none of the questions in the survey expose participants to subject matter that is not readily available or discussed in newspapers, television, magazines, radio, surfing the web, online social media networks, or their daily lives. However, because we are asking you to recall stigmatizing experiences, you may experience some distress.

If you experience distress from one of these questions, you are able to skip any question.

Following the completion of the study, a list of resources will be provided to you in a debriefing form that can be accessed online.

If you do feel any distress or discomfort from the survey, you may utilize the resources below.

Resources:

- **Canada**: Crisis Services Canada- Call [redacted]or text [redacted]. https://www.crisisservicescanada.ca/en/
- **UK**: Samaritans- Call [redacted]. https://www.samaritans.org/

8. Possible Benefits

You may not directly benefit from participating in this study, but the knowledge gained from this study may help to better understand people's everyday weight-related experiences.

9. Compensation

The study should take about 20 minutes. You will be compensated £1.70 ($2.90 CAD) based on a rate of £5 per hour. Compensation will still be given if you decide to withdraw from the study.

10. Voluntary Participation

Your participation in this study is voluntary, and you may decide not to participate at any time. You do not waive any legal rights by consenting to this study.

If you decide to withdraw from participating, you will still be compensated and any data you have already submitted will be retained. If you wish to withdraw your data for any reason, you may do so. If you wish your data to be withdrawn at any time, please email Megan Lindloff [redacted]. However, data cannot be withdrawn once the paper has been submitted for publication. Once submitted for publication your Prolific ID code will be removed from our data and we will no longer be able to identify your responses. If you choose to withdraw your participation before you have completed the survey, you can close the survey. During the study you are free to omit any question you wish not to answer, without penalty or loss of compensation.

11. Confidentiality

All of your responses will remain confidential. All responses within the surveys are coded with each participants' unique ID code, which cannot be used by the research team to directly identify you. Your responses will be used for research purposes only. In reports of this study, only aggregated group data will be presented.

Your consent and survey responses will be collected through a third party, secure online survey platform called Qualtrics. Qualtrics uses encryption technology and restricted access authorizations to protect the privacy and security of all data collected and retained, including personal information. In addition, Western's Qualtrics server is in Ireland, where privacy standards are maintained under the European Union's General Data Protection Regulation, which is consistent with Canada's privacy legislation. Please refer to Qualtric's Privacy Policy

(https://www.qualtrics.com/privacy-statement/) for more details about Qualtric's information management practices. The data will then be exported from Qualtrics and securely stored on Western University's server. Please note that despite the strong security measures in place, we acknowledge that nothing connected to the Internet is 100% secure.

In line with current best practices in research, anonymized data from this study may be made available to other researchers in the future, however the data will contain no information (Prolific ID) that could be tracked back to individual participants. Open science initiatives allow for researchers from different universities to share their data upon completion of studies, in an effort to stimulate further use and exploration of existing data sets.

All electronic documents will be kept on a secure university network. The data will be kept for a period of 7 years in accordance with Western University policy. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of the research.

12. Contacts for Further Information
If you would like to receive any further information regarding this research or your participation in the study, you may contact Megan Lindloff [redacted] or Angela Meadows [redacted] You may also contact the principal investigator in this study, Rachel Calogero [redacted]

For any questions regarding the conduct of the study, or your rights as a research participant, you may contact the Office of Human Research Ethics at Western University, [redacted] or [redacted].

13. Publication
If the results of the study are published, only aggregated data will be used that does not identify you personally. If you would like to receive a copy of any potential study results, please contact Megan Lindloff [redacted].

You may print this form for your records.

Informed Consent

I have read the Letter of Information, have had the nature of the study explained to me, and all questions have been answered to my satisfaction. I agree to participate.

I understand that by clicking 'I agree' below, I am indicating my consent to participate.

- I agree to participate in the survey.
- I do not agree to participate in either survey. I will exit the survey now.

Appendix D: Instruments – Study 3

Initial Battery of FMS Items Presented to Participants in Study 3

1. People assumed I am lazy
2. People assumed I eat "too much"
3. People assumed I am unintelligent
4. People assumed I have a lot of health problems
5. People have lower expectations of me
6. People assumed I am less competent than others
7. People act as if they are afraid of me
8. People assumed I am pregnant
9. People assumed I am trying to lose weight
10. People assumed I am unhappy with my weight
11. People assumed I eat "unhealthy" foods
12. People assumed I do not exercise
13. People assumed I am disabled
14. People assumed that I have poor hygiene
15. People act disgusted by me
16. People shamed me for my weight using the excuse that they are concerned for my health
17. People have told me that I will die if I do not lose weight
18. People have told me that I will get diabetes or other health issues if I do not lose weight
19. People who are not health professionals ask me about my blood sugar, cholesterol, etc.
20. People insisted their "concern for my health" is not fat shaming
21. People have told me to lose weight in order to be healthier
22. People have told me that being fat is unhealthy
23. People have insisted they are "only trying to help" after fat shaming me
24. My parents or relatives tell me how much more attractive I would be if I lost weight
25. People tell me that I will never find a partner if I don't lose weight
26. A romantic partner has exploited me because they assumed I was desperate and would put up with it
27. People act as though I am unattractive or romantically unappealing
28. A romantic partner has been ashamed to admit to being with me
29. A romantic partner has told me to lose weight to be more attractive
30. I am unable to get a date because of my size
31. People have acted surprised that I have a romantic partner
32. People have acted as if I should feel lucky to have a romantic partner
33. People have not believed that I was sexually assaulted or at risk for sexual assault because of my weight
34. I have been fetishized for my weight

35. People have suggested I need to lower my standards for a romantic partner because of my weight
36. People have acted surprised to learn that I have sex
37. Children tease or insult me because of my weight
38. Family members or friends act embarrassed by me
39. People treat me with less respect than others
40. I receive poorer service than others at restaurants or stores
41. I am ignored or avoided by others because of my weight
42. I am excluded from social groups or activities because of my weight
43. I am called names or insulted because of my weight
44. Someone has posted something mean or embarrassing about my weight online
45. Someone has acted as if they are better than me because of my weight
46. I was given a nickname that refers to my weight
47. I have heard someone make disparaging comments like “no one wants to see that,” when a fat person is wearing revealing clothing
48. People tell me that I look much better after I have lost weight
49. People comment on my weight when greeting me
50. People have made animal noises at me
51. People have compared me to an animal
52. People knowingly buy me clothes in smaller sizes to incentivize me to lose weight
53. People think I cannot be a good parent or caregiver because of my weight
54. People act as if I cannot be a good husband/wife/relationship partner because of my weight
55. People discourage me from eating
56. People criticize me when I eat high-calorie foods
57. People criticize the amount of physical activity I do
58. People criticize my physical skills when I play sports or exercise
59. People stare or give me dirty looks in the gym
60. People give you unsolicited tips about weight loss
61. People negatively judge me at the gym
62. Gym staff members or personal trainers have commented negatively on my weight
63. I have been told “all you really need is a little willpower”
64. People have suggested I should engage in disordered eating, such as throwing up meals, in order to lose weight
65. People have asked me, “Are you sure you want to eat that?”
66. People have asked me if I have ever considered going on a diet
67. People have made unsolicited comments on what I am eating
68. People are surprised to learn I am a vegetarian/vegan or eat “healthy” because of my weight
69. People have suggested I cut out a food group (carbs, sugar, etc.) in order to lose weight

70. Family and friends nag me to lose weight
71. People have told me that I need to go on a diet
72. People have suggested that I take an appetite suppressant
73. People have suggested that I exercise more to lose weight
74. I receive negative weight or appearance-related feedback on performance reports
75. At work, I seem to be placed out of sight of the public
76. My workplace implemented a "wellness program" with a focus on weight loss
77. My workplace was unable to provide me with clothing that fit
78. During a job interview, I was questioned if I could keep up with the job
79. My colleagues repeatedly ask me to join their latest weight loss or diet challenge
80. People at work don't offer me treats (birthday cake, cookies, etc.) when they're available
81. My company won't provide seating that is suitable for my body
82. My employer acted as if it was an inconvenience to get me a work uniform in my size
83. My employer made unsolicited comments on the size I required for my work uniform
84. People at work gave me unsolicited diet advice
85. I am not able to comfortably fit through aisles
86. I am not able fit into bus/airplane seats, small cars, or standard seatbelts
87. I am not able fit into seats at restaurants, theaters, or other public places
88. I am not able fit through turnstiles, on amusement park rides, or on other similar places
89. The equipment (e.g., stationary bicycle, elliptical machine) at my gym feels too small for me
90. I was prevented from everyday activities or leisure activities because of physical barriers in my environment
91. I was not able to find medical equipment, such as blood pressure cuffs or gowns, that fit me
92. I was not able to fit in chairs in the waiting room at my healthcare appointments
93. I was not able to fit in chairs in lecture halls or classrooms with built in desks
94. I see posters near elevators with images or slogans such as "be fit, not fat," shaming me for not taking the stairs
95. I overhear someone say food will make them fat
96. I overhear someone say they "feel" fat
97. I overhear someone say an item clothing makes them look fat
98. My thin friend calls themselves fat in front of you
99. I overhear people calling their bodies disgusting because of their weight
100. I overhear people complain they need to stop eating so much
101. My thin friend criticizes their weight in front of me
102. I am not able to find clothes that fit
103. Clothing that says "one size fits all" does not fit me
104. Clothing in my size has fewer options than smaller sizes
105. Clothing in my size is more expensive than smaller sizes

106. Clothing in my size is almost always hidden in the back corner of the store
107. A clothes salesperson has treated me rudely or dismissively because of my size
108. The only clothing in my size has “slimming” features (black, vertical stripes, sleeves, spandex inserts, etc.)
109. Stores or brands do not carry clothing in your size in store, but only online
110. Sporting events that give all participants free t-shirts do not provide them in your size
111. Stores that advertise “inclusive sizing do not carry my size
112. Someone has suggested I try on clothing that covers more of my body or is more “minimizing”
113. Doctors blame unrelated physical problems on my weight
114. A doctor says that my weight is a “health problem” even when I am in “good health”
115. Doctors recommend a diet even if I did not come to discuss weight loss
116. Doctors have tried to scare me into losing weight
117. When I am weight on a scale, the medical staff make negative comments about my weight
118. A doctor refused to do an exam on me because of my weight
119. Healthcare providers treated me as lazy because of my weight
120. Healthcare providers treated me as less competent because of my weight
121. Medical staff make negative remarks, ridicule me, or call me names
122. Doctors have made rude comments about how my body looks
123. People have praised me for losing weight due to an illness
124. People have acted as if I am a financial burden to society or the healthcare system
125. People believed that I could not have an eating disorder because of my weight
126. Medical staff don’t use the right size equipment on me (blood pressure cuff, medical gowns, etc.)
127. Doctors have ignored your health concerns, instead blaming my weight
128. Doctors have minimized harmful side effects of a medication because it will help me lose weight
129. Doctors have suggested bariatric surgery even after I have explained I am not interested
130. Healthcare providers have looked disgusted or made disgusted noises during a medical exam
131. A doctor has refused to give me the medication I need because weight gain could be a side effect
132. I am the brunt of family jokes because of my weight
133. People make fun of me because of my weight
134. People make jokes about my weight
135. I overhear weight-related jokes (even if not directed specifically at me)

136. I see bumper stickers, t-shirts, or advertising that ridicules fat people
137. People make fun of me when I exercise
138. People make fun of how much or what I eat
139. I heard comedians making fat jokes during their set
140. People make fun of other fat people in front of me
141. People make fun of how I look in my clothing
142. I see fat characters being ridiculed or used as comic relief in television shows or movies
143. I see news headlines promoting weight loss
144. I am targeted online with advertisements for weight loss products
145. I see online comments fat shaming people
146. I see social media posts fat shaming people
147. I do not see my body type positively represented in media
148. I hear fat jokes in television shows or films
149. I see characters wearing fat suits in television shows or films for comic relief
150. I see news stories accompanied by photos of fat people without heads
151. I see news stories accompanied by photos of fat people eating
152. I see news stories accompanied by photos of fat people only shown from behind
153. I see news stories accompanied by photos of fat people bursting out of their clothes
154. I receive online comments that criticize me for my weight
155. On photos of fat people, I see comments that they are "promoting obesity"
156. I see shows exploiting fat people for entertainment
157. I see news headlines warning about the dangers of fatness
158. I see fat characters being portrayed as a target of pity
159. I see fat characters portrayed as unlovable in the media
160. I see fat characters being portrayed as unintelligent
161. In the media, the villains are portrayed as fat
162. I see fat characters being portrayed as lazy
163. I am stared at in public
164. People point at me in public
165. Strangers have suggested diets to me
166. Strangers have taken photographs of me
167. In the supermarket, people have criticized or made comments about my food choices
168. People have asked intrusive, personal questions about my weight
169. I have overheard other people making rude remarks about my weight in public
170. People give me disgusted looks at a grocery store or restaurant
171. People shout insults to me from their cars
172. People give me judgmental stares when I am at the gym

173. People squeeze or pinch my body
174. People stared or laughed at me at the beach or pool
175. Waiters have given me diet versions of food when I did not order it (e.g., bringing a diet soda when I ordered a regular)
176. People assumed I was on a diet or said, “good for you!” after seeing me eat “healthy” food
177. People said, “good for you!” after seeing me exercise

Demographic Questionnaire

What gender do you identify as?

- Woman (cisgender)
- Woman (transgender)
- Man (cisgender)
- Man (transgender)
- Non-binary
- Prefer not to say
- Self-identify: _____

What is your sexual identity?

- Asexual
- Bisexual
- Gay
- Lesbian
- Queer
- Straight (heterosexual)
- Prefer not to say
- Self-identify: _____

In what country do you currently reside?

_____

How would you describe your own socioeconomic status? I consider myself to be:

- Lower class
- Working class
- Lower middle class
- Middle class
- Upper middle class
- Upper class

How would you describe your race? Race refers to a socially constructed category based on a person's physical characteristics (e.g., White, Black, Asian, Latinx). You may type in more than one race.

_____

How would you describe your ethnicity? Ethnicity refers to a shared cultural heritage that distinguishes one group of people from another including ancestry, a sense of history, language, religion, foods, and clothing (e.g., Japanese, Eastern European, Nigerian, Greek, Canadian). You may type in more than one ethnicity.

_____

How old are you (in years)?

_____

How tall are you in feet and inches?

_____

How much do you weigh in pounds?

_____

Appendix E: Debriefing – Study 3

Weight-Related Experiences in Everyday Life

This form will explain to you in more detail the purpose of the study. The study you just completed was a preliminary investigation of a new scale to assess experiences of fat microaggressions. Microaggressions are subtle, everyday acts that demean a target on the basis of their membership to a stigmatized group. Fat microaggressions target a person because of their weight.

The study in which you just participated is an attempt to construct and validate a new scale, the Fat Microaggressions Scale, for use in psychological research.

If participating in this study has caused you any distress or discomfort, please be aware that the researchers of this study are available to answer questions and discuss the purposes of the research further. By participating in this study, you have contributed to results that will help better understand people's experiences of fat microaggressions.

We are here to answer any questions you may have about the study. Please feel free to contact Megan Lindloff [redacted], Dr. Rachel Calogero [redacted], or Dr. Angela Meadows [redacted]. If you have questions about your rights as a research subject, you should contact the Director of the Office of Human Research Ethics at Western University [redacted]. You may also contact the Office of Human Research Ethics at their long distance (toll free) number [redacted].

Thank you again for your time and participation – it is greatly appreciated!

Megan Lindloff, Dr. Angela Meadows, and Dr. Rachel Calogero (Principal Investigator)

If you do feel any distress or discomfort from the survey, you may utilize the resources below:

- **Canada**: Crisis Services Canada- Call [redacted] or text [redacted]. https://www.crisisservicescanada.ca/en/
- **UK**: Samaritans- Call [redacted]. https://www.samaritans.org/

For further information, you may find the following readings of interest:

Resource page on website of Association for Size Diversity and Health (ASDAH). (https://www.sizediversityandhealth.org/what-we-do/) ASDAH provides a list of books, articles, websites, audio-visual materials and other content on a wide range of subjects included body image, nutrition/diet, mental health, physical health, disordered eating, and eating disorders

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

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

Appendix F: Letter of Information – Study 4

Project Title: Experiences of Fat Microaggressions

Researchers:
Rachel Calogero, PhD (Principal Investigator)
Email: [redacted]

Megan Lindloff, Masters Student, Co-Investigator
Email: [redacted]

Angela Meadows, PhD, Co-Investigator
Email: [redacted]

1. Invitation to Participate
You are invited to participate in a research study that will be conducted by Megan Lindloff, Masters Student, from the Department of Psychology at Western University, under the supervision of Dr. Rachel Calogero, Ph.D., from the Department of Psychology at Western University and Dr. Angela Meadows, Ph.D., from the Department of Psychology at the University of Essex.

2. Purpose of this Letter
The purpose of this letter is to provide you with information in order to allow you to make an informed decision regarding participation in this research.

3. Purpose of this Study
We are interested in people's experiences of microaggressions due to their weight.

4. Inclusion Criteria
Participants will need to self-identify as 'overweight,' 'obese,' 'fat,' or 'heavier,' etc., speak English fluently, be aged at least 18 years old, and have internet access.

5. Exclusion Criteria
Participants will be excluded from the study if they do not meet the criteria listed above.

6. Study Procedures
Participants will read a letter of information and indicate that they have read and agree to the study procedures. They will then be asked to complete a questionnaire about experiences related to their weight and other aspects of their life, followed by a standard demographic survey.

7. Possible Risks and Harms
If you consent to participate, none of the questions in the survey expose participants to subject matter that is not readily available or discussed in newspapers, television, magazines, radio, surfing the web, online social media networks, or their daily lives. However, because we are asking you to recall stigmatizing experiences, you may experience some distress.

If you experience distress from one of these questions, you are able to skip any question.

Following the completion of the study, a list of resources will be provided to you in a debriefing form that can be accessed online.

If you do feel any distress or discomfort from the survey, you may utilize the resources below.
Resources:

- **Canada**: Crisis Services Canada- Call [redacted] or text [redacted]. https://www.crisisservicescanada.ca/en/
- **UK**: Samaritans- Call [redacted]. https://www.samaritans.org/

8. Possible Benefits
You may not directly benefit from participating in this study, but the knowledge gained from this study may help to better understand people's everyday weight-related experiences.

9. Compensation
The study should take about 20 minutes. You will be compensated £1.70 ($2.90 CAD) based on a rate of £5 per hour. Compensation will still be given if you decide to withdraw from the study.

10. Voluntary Participation
Your participation in this study is voluntary, and you may decide not to participate at any time. You do not waive any legal rights by consenting to this study.

If you decide to withdraw from participating, you will still be compensated and any data you have already submitted will be retained. If you wish to withdraw your data for any reason, you may do so. If you wish your data to be withdrawn at any time, please email Megan Lindloff [redacted]. However, data cannot be withdrawn once the paper has been submitted for publication. Once submitted for publication your Prolific ID code will be removed from our data and we will no longer be able to identify your responses. If you choose to withdraw your participation before you have completed the survey, you can close the survey. During the study you are free to omit any question you wish not to answer, without penalty or loss of compensation.

11. Confidentiality
All of your responses will remain confidential. All responses within the surveys are coded with each participants' unique ID code, which cannot be used by the research team to directly identify you. Your responses will be used for research purposes only. In reports of this study, only aggregated group data will be presented.

Your consent and survey responses will be collected through a third party, secure online survey platform called Qualtrics. Qualtrics uses encryption technology and restricted access authorizations to protect the privacy and security of all data collected and retained, including personal information. In addition, Western's Qualtrics server is in Ireland, where privacy standards are maintained under the European Union's General Data Protection Regulation, which is consistent with Canada's privacy legislation. Please refer to Qualtric's Privacy Policy (https://www.qualtrics.com/privacy-statement/) for more details about Qualtric's information

management practices. The data will then be exported from Qualtrics and securely stored on Western University's server. Please note that despite the strong security measures in place, we acknowledge that nothing connected to the Internet is 100% secure.

In line with current best practices in research, anonymized data from this study may be made available to other researchers in the future, however the data will contain no information (Prolific ID) that could be tracked back to individual participants. Open science initiatives allow for researchers from different universities to share their data upon completion of studies, in an effort to stimulate further use and exploration of existing data sets.

All electronic documents will be kept on a secure university network. The data will be kept for a period of 7 years in accordance with Western University policy. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of the research.

12. Contacts for Further Information
If you would like to receive any further information regarding this research or your participation in the study, you may contact Megan Lindloff [redacted] or Angela Meadows [redacted]. You may also contact the principal investigator in this study, Rachel Calogero [redacted].

For any questions regarding the conduct of the study, or your rights as a research participant, you may contact the Office of Human Research Ethics at Western University, [redacted] or [redacted].

13. Publication
If the results of the study are published, only aggregated data will be used that does not identify you personally. If you would like to receive a copy of any potential study results, please contact Megan Lindloff [redacted].

You may print this form for your records.

Informed Consent

I have read the Letter of Information, have had the nature of the study explained to me, and all questions have been answered to my satisfaction. I agree to participate.

I understand that by clicking ‘I agree’ below, I am indicating my consent to participate.

- I agree to participate in the survey.
- I do not agree to participate in either survey. I will exit the survey now.

Appendix G: Instruments – Study 4

Stigmatizing Situations Inventory-Brief
(Vartanian, 2015)

10-point rating scale from 1 (Never) to 10 (Daily)

Instructions: Below is a list of situations that people encounter because of their weight. Please indicate whether, and how often, each of these situations happens to you.

1. Being singled out as a child by a teacher, school nurse, etc., because of your weight
2. Being stared at in public
3. Children loudly making comments about your weight to others
4. Having a doctor recommend a diet, even if you did not come in to discuss weight loss
5. Having a romantic partner exploit you, because she or he assumed you were 'desperate' and put up with it
6. Overhearing other people making rude remarks about you in public
7. Not being hired because of your weight, shape or size
8. Having family members feel embarrassed by you or ashamed of you
9. Having people assume you overeat or binge eat because you are overweight
10. Being glared at or harassed by bus passengers for taking up 'too much' room

Scoring: Responses are averaged, with higher scores indicating more frequent experiences of weight stigma.

Weight Bias Internalization Scale-Modified

(Pearl & Puhl, 2014)

7-point rating scale from 1 (Strongly disagree) to 7 (Strongly agree)

Instructions: Please rate your agreement with each of the following items.

1. Because of my weight, I feel that I am just as competent as anyone
2. I am less attractive than most other people because of my weight
3. I feel anxious about my weight because of what people might think of me
4. I wish I could drastically change my weight
5. Whenever I think a lot about being overweight, I feel depressed
6. I hate myself for my weight
7. My weight is a major way that I judge my value as a person
8. I don't feel that I deserve to have a really fulfilling social left because of my weight
9. I am OK being the weight that I am
10. Because of my weight, I don't feel like my true self
11. Because of my weight, I don't understand how anyone attractive would want to date me

Scoring: Reverse score starred items, then average all responses. Higher scores indicate greater feelings of internalized weight stigma.

Perceived Stress Scale 4

(Cohen et al., 1983)

5-point rating scale from 0 (Never) to 4 (Very often)

Instructions: The questions in this scale ask you about your feelings and thoughts during **the last month**. In each case, please indicate your response by selecting **how often** you felt or thought a certain way.

1. In the last month, how often have you felt that you were unable to control the important things in your life?
2. In the last month, how often have you felt confident about your ability to handle your personal problems?
3. In the last month, how often have you felt that things were going your way?
4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Scoring: Reverse score starred items, then average all responses. Higher scores indicate greater stress.

Restricted Activities Scale

(Robinson & Bacon, 1989)

5-point rating scale from 1 (Never) to 5 (Always)

Instructions: Experiences I have had related to my weight, body shape, or size prevent (or would prevent) me from:

1. Improving my job, position, or business
2. Considering/planning to go to school
3. Looking for a job
4. Eating out
5. Eating in front of others
6. Buying certain foods at the grocery store
7. Eating what I want
8. Wearing shorts and/or bathing suits
9. Wearing form-fitting or "sexy" clothes
10. Buying or using products or accessories, like cologne, perfume, jewelry, belts, make-up, etc.
11. Spending time/effort/money on my hair
12. Buying fashionable clothes
13. Participating in a health club and/or an exercise class
14. Going to the doctor
15. Eating nutritiously
16. Quitting smoking
17. Feeling desirable, "sexy," or attractive
18. Feeling self-assured/self-confident
19. Liking myself
20. Feeling like I have options and choices in my life
21. Feeling liked/accepted by others
22. Doing things with other people/socializing
23. Trying to meet new people
24. Seeing people who knew me when I was thinner
25. Going to parties
26. Dating
27. Flirting
28. Going out to night clubs, bars, etc.
29. Going out dancing
30. Wanting to have sex with my/a partner
31. Having sex with my/a partner

32. Letting my/a partner see me naked
33. Enjoying sex with my/a partner
34. Initiating sex with my/a partner
35. Displaying or accepting physical affection from my/a partner
36. Doing something I've always wanted to do (Please specify):
37. Something else (Please specify):

Scoring: Sum all responses. Higher scores indicate greater avoidance of activities.

Self-rated Health

5-point rating scale: 1 = *Poor*, 2 = *Fair*, 3 = *Good*, 4 = *Very good*, and 5 = *Excellent*

1. "In general, would you say your health is …?"

Scoring: Higher scores indicate better self-rated health.

Appendix H: Debriefing – Study 4

Weight-Related Experiences in Everyday Life

This form will explain to you in more detail the purpose of the study. The study you just completed was a preliminary investigation of a new scale to assess experiences of fat microaggressions. Microaggressions are subtle, everyday acts that demean a target on the basis of their membership to a stigmatized group. Fat microaggressions target a person because of their weight.

The study in which you just participated is an attempt to construct and validate a new scale, the Fat Microaggressions Scale, for use in psychological research.

If participating in this study has caused you any distress or discomfort, please be aware that the researchers of this study are available to answer questions and discuss the purposes of the research further. By participating in this study, you have contributed to results that will help better understand people's experiences of fat microaggressions.

We are here to answer any questions you may have about the study. Please feel free to contact Megan Lindloff [redacted], Dr. Rachel Calogero [redacted], or Dr. Angela Meadows [redacted]. If you have questions about your rights as a research subject, you should contact the Director of the Office of Human Research Ethics at Western University [redacted]. You may also contact the Office of Human Research Ethics at their long distance (toll free) number [redacted].

Thank you again for your time and participation – it is greatly appreciated!

Megan Lindloff, Dr. Angela Meadows, and Dr. Rachel Calogero (Principal Investigator)

If you do feel any distress or discomfort from the survey, you may utilize the resources below:

- **Canada**: Crisis Services Canada- Call [redacted] or text [redacted]. https://www.crisisservicescanada.ca/en/
- **UK**: Samaritans- Call [redacted]. https://www.samaritans.org/

For further information, you may find the following readings of interest:

Resource page on website of Association for Size Diversity and Health (ASDAH). (https://www.sizediversityandhealth.org/what-we-do/) ASDAH provides a list of books, articles, websites, audio-visual materials and other content on a wide range of subjects included body image, nutrition/diet, mental health, physical health, disordered eating, and eating disorders

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

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

Appendix I: Fat Microaggressions Scale (FMS)

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

Direct Experiences

1. Medical staff make negative remarks, ridicule me, or call me names
2. Someone has posted something mean or embarrassing about my weight online
3. People give me disgusted looks in a grocery store or restaurant
4. People stare or give me dirty looks in the gym
5. I am not able to fit into seats at restaurants, theaters, or other public places
6. People stared or laughed at me at the beach or pool
7. People have acted surprised that I have a romantic partner
8. I am not able to comfortably fit through aisles or turnstiles
9. People act as if they are afraid of me
10. I am excluded from social groups or activities because of my weight
11. I have overheard other people making rude remarks about my weight in public

Indirect Experiences

12. I see fat people exploited for entertainment
13. I hear fat jokes in television shows or films
14. I see fat characters being portrayed as a target of pity
15. I see fat characters being portrayed as unlovable
16. I see people post comments on photos of fat people that they are “promoting obesity”
17. I see fat characters being portrayed as unintelligent
18. I see online comments fat shaming people
19. I overheard someone say they "feel" fat
20. People make fun of other fat people in front of me
21. I see news headlines warning about the dangers of fatness
22. I have heard someone make disparaging comments like "no one wants to see that" when a fat person is wearing revealing clothing
23. My thin friend called themselves fat in front of me

Clothing

24. When shopping, clothing in my size has fewer options than smaller sizes*
25. Events that give all participants free t-shirts do not provide them in my size*
26. When shopping, clothing in my size is more expensive than smaller sizes*
27. When shopping, stores that advertise "inclusive" sizing do not carry my size*
28. When shopping, clothing that said "one size fits all" has not fit me*
29. I am not able to find clothes that fit

Weight Loss Prescriptions

30. People have told me I need to go on a diet
31. People have suggested that I exercise more to lose weight
32. People insisted their "concern for my health" is not fat shaming
33. People have told me I will get diabetes or other health issues if I do not lose weight
34. People give me unsolicited tips about weight loss
35. I have been told "all you really need is a little willpower"
36. People said, "good for you!" after seeing me exercise
37. People have told me that I look much better after I have lost weight
38. People have made unsolicited comments on what I am eating
39. People who are not health professionals ask me about my blood sugar, cholesterol, etc.
40. I see posters near elevators with images or slogans such as "be fit, not fat," shaming me for not taking the stairs

Items are rated:
1 = never
2 = rarely
3 = sometimes
4 = often
5 = most days

With the exception of the starred items, which are rated:
1 = never
2 = rarely
3 = sometimes
4 = often
5 = usually

Appendix J: Research Ethics Approval – Study 5

Western Research

Date: 27 April 2022

To: Dr. Rachel Calogero

Project ID: 119724

Study Title: Development and Validation of the Fat Microaggressions Scale

Application Type: NMREB Amendment Form

Review Type: Delegated

Full Board Reporting Date: 06/May/2022

Date Approval Issued: 27/Apr/2022 16:18

REB Approval Expiry Date: 13/Dec/2022

Dear Dr. Rachel Calogero,

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the amendment, as of the date noted above.

Documents Approved:

Document Name	Document Type	Document Date	Document Version
Test-Retest LOI	Implied Consent/Assent	25/Apr/2022	2
Test-retest_FMS_Qualtrics	Online Survey	25/Apr/2022	2

Documents Acknowledged:

Document Name	Document Type	Document Date	Document Version
Test-retest recruitment	Information Update Letter	25/Apr/2022	2

REB members involved in the research project do not participate in the review, discussion or decision.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Ms. Katelyn Harris, Ms. Zoë Levi, Research Ethics Officer on behalf of Dr. Randal Graham, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix K: Letter of Information – Study 5

Project Title: Experiences of Fat Microaggressions

Researchers:
Rachel Calogero, PhD (Principal Investigator)
Email: [redacted]

Megan Lindloff, Masters Student, Co-Investigator
Email: [redacted]

Angela Meadows, PhD, Co-Investigator
Email: [redacted]

1. Invitation to Participate
You are invited to participate in a research study that will be conducted by Megan Lindloff, Masters Student, from the Department of Psychology at Western University, under the supervision of Dr. Rachel Calogero, Ph.D., from the Department of Psychology at Western University and Dr. Angela Meadows, Ph.D., from the Department of Psychology at the University of Essex.

2. Purpose of this Letter
The purpose of this letter is to provide you with information in order to allow you to make an informed decision regarding participation in this research.

3. Purpose of this Study
You have participated in Phase 1 of this research, and we are now in Phase 2. We are interested in learning more about people's everyday experiences related to their weight and how that may change over time.

4. Inclusion Criteria
Participants will need to self-identify as 'overweight,' 'obese,' 'fat,' or 'heavier,' etc., speak English fluently, be aged at least 18 years old, and have internet access.

5. Exclusion Criteria
Participants will be excluded from the study if they do not meet the criteria listed above.

6. Study Procedures
Participants will read a letter of information and indicate that they have read and agree to the study procedures. They will then be asked to complete a questionnaire about experiences related to their weight and other aspects of their life, followed by a standard demographic survey.

7. Possible Risks and Harms
If you consent to participate, none of the questions in the survey expose participants to subject matter that is not readily available or discussed in newspapers, television, magazines, radio,

surfing the web, online social media networks, or their daily lives. However, because we are asking you to recall stigmatizing experiences, you may experience some distress.

If you experience distress from one of these questions, you are able to skip any question.

Following the completion of the study, a list of resources will be provided to you in a debriefing form that can be accessed online.

If you do feel any distress or discomfort from the survey, you may utilize the resources below.
Resources:

- **Canada**: Crisis Services Canada- Call [redacted] or text [redacted]. https://www.crisisservicescanada.ca/en/
- **UK**: Samaritans- Call [redacted]. https://www.samaritans.org/

8. Possible Benefits
You may not directly benefit from participating in this study, but the knowledge gained from this study may help to better understand people's everyday weight-related experiences.

9. Compensation
The study should take about 15 minutes. You will be compensated £1.88 ($3.09 CAD) based on a rate of £7.52 per hour. Compensation will still be given if you decide to withdraw from the study.

10. Voluntary Participation
Your participation in this study is voluntary, and you may decide not to participate at any time. You do not waive any legal rights by consenting to this study.

If you decide to withdraw from participating, you will still be compensated and any data you have already submitted will be retained. If you wish to withdraw your data for any reason, you may do so. If you wish your data to be withdrawn at any time, please email Megan Lindloff [redacted]. However, data cannot be withdrawn once the paper has been submitted for publication. Once submitted for publication your Prolific ID code will be removed from our data and we will no longer be able to identify your responses. If you choose to withdraw your participation before you have completed the survey, you can close the survey. During the study you are free to omit any question you wish not to answer, without penalty or loss of compensation.

11. Confidentiality
All of your responses will remain confidential. All responses within the surveys are coded with each participants' unique ID code, which cannot be used by the research team to directly identify you. Your responses will be used for research purposes only. In reports of this study, only aggregated group data will be presented.

Your consent and survey responses will be collected through a third party, secure online survey platform called Qualtrics. Qualtrics uses encryption technology and restricted access authorizations to protect the privacy and security of all data collected and retained, including

personal information. In addition, Western's Qualtrics server is in Ireland, where privacy standards are maintained under the European Union's General Data Protection Regulation, which is consistent with Canada's privacy legislation. Please refer to Qualtric's Privacy Policy (https://www.qualtrics.com/privacy-statement/) for more details about Qualtric's information management practices. The data will then be exported from Qualtrics and securely stored on Western University's server. Please note that despite the strong security measures in place, we acknowledge that nothing connected to the Internet is 100% secure.

In line with current best practices in research, anonymized data from this study may be made available to other researchers in the future, however the data will contain no information (Prolific ID) that could be tracked back to individual participants. Open science initiatives allow for researchers from different universities to share their data upon completion of studies, in an effort to stimulate further use and exploration of existing data sets.

All electronic documents will be kept on a secure university network. The data will be kept for a period of 7 years in accordance with Western University policy. Representatives of The University of Western Ontario Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of the research.

12. Contacts for Further Information
If you would like to receive any further information regarding this research or your participation in the study, you may contact Megan Lindloff [redacted] or Angela Meadows [redacted]. You may also contact the principal investigator in this study, Rachel Calogero [redacted].

For any questions regarding the conduct of the study, or your rights as a research participant, you may contact the Office of Human Research Ethics at Western University, [redacted] or [redacted].

13. Publication
If the results of the study are published, only aggregated data will be used that does not identify you personally. If you would like to receive a copy of any potential study results, please contact Megan Lindloff [redacted].

You may print this form for your records.

Informed Consent

I have read the Letter of Information, have had the nature of the study explained to me, and all questions have been answered to my satisfaction. I agree to participate.

I understand that by clicking 'I agree' below, I am indicating my consent to participate.

- I agree to participate in the survey.
- I do not agree to participate in either survey. I will exit the survey now.

Appendix L: Instruments – Study 5

Two-Factor Weight Bias Internalization Scale
(Meadows & Higgs, 2019)

7-point rating scale from 1 (Strongly disagree) to 7 (Strongly agree)

Instructions: Please rate your agreement with each of the following items.

1. As an overweight person, I feel that I am just as competent as anyone* (SD)
2. I feel anxious about being overweight because of what people might think of me (D)
3. I wish I could drastically change my weight (D)
4. Whenever I think a lot about being overweight, I feel depressed (D)
5. I feel that being overweight doesn't interfere with my ability to be a good and decent person* (SD)
6. I hate myself for being overweight (D)
7. My weight is a major way that I judge my value as a person (D)
8. I don't feel that I deserve to have a really fulfilling social life as long as I'm overweight (SD)
9. As an overweight person, I feel that I am just as deserving of respect as anyone* (SD)
10. It really bothers me that people look down on overweight people (D)
11. I feel that being overweight does not make me unworthy of a loving relationship* (SD)
12. Because of my weight, I don't understand how anyone attractive would want to date me (D)
13. If other people don't treat me with respect, I should put up with it because of my weight (SD)

Scoring: Reverse score starred items, then average all responses. Higher scores indicate greater feelings of internalized weight stigma.
SD = Self-devaluation
D = Distress

Depression Anxiety Stress Scale-21

(Lovibond & Lovibond, 1995)

4-point rating scale from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time)

Instructions: Please read each statement and select how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

1. I found it hard to wind down (S)

2. I was aware of dryness of my mouth (A)

3. I couldn't seem to experience any positive feeling at all (D)

4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion) (A)

5. I found it difficult to work up the initiative to do things (D)

6. I tended to over-react to situations (S)

7. I experienced trembling (e.g., in the hands) (A)

8. I felt that I was using a lot of nervous energy (S)

9. I was worried about situations in which I might panic and make a fool of myself (A)

10. I felt that I had nothing to look forward to (D)

11. I found myself getting agitated (S)

12. I found it difficult to relax (S)

13. I felt down-hearted and blue (D)

14. I was intolerant of anything that kept me from getting on with what I was doing (S)

15. I felt I was close to panic (A)

16. I was unable to become enthusiastic about anything (D)

17. I felt I wasn't worth much as a person (D)

18. I felt that I was rather touchy (S)

19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat) (A)

20. I felt scared without any good reason (A)

21. I felt that life was meaningless (D)

Scoring: Items are summed for each subscale and multiplied by two. Higher scores indicate greater feelings of depression, anxiety, and stress.

Trauma Symptoms of Discrimination Scale

(Williams, et al., 2018)

4-point rating scale from 1 (Never) to 4 (Often)

Instructions: Experiencing discrimination can be very stressful, and sometimes people can feel specific types of stress due to discrimination that impact their daily lives. This can be caused by **one very** stressful experience of discrimination, or **several smaller** experiences of discrimination over the course of one's life. Based on these experiences in your life, answer the following questions. Please keep in mind that ratings should reflect whether the type of stress was **caused** by discrimination.

1. Due to past experiences of discrimination, I often worry too much about different things.

2. Due to past experiences of discrimination, I often try hard not to think about it or go out of my way to avoid situations that remind me of it.

3. Due to past experiences of discrimination, I often fear embarrassment.

4. Due to past experiences of discrimination, I often feel nervous, anxious, or on edge, especially around certain people.

5. Due to past experiences of discrimination, I often feel afraid as if something awful might happen.

6. Due to past experiences of discrimination, I often have nightmares about the past experience or think about it when I do not want to.

7. Due to past experiences of discrimination, I often have trouble relaxing.

8. Due to past experiences of discrimination, I often feel numb or detached from others, activities, or my surroundings.

9. Due to past experiences of discrimination, I often avoid certain activities in which I am the center of attention (i.e., parties, meetings, answering questions in class).

10. Due to past experiences of discrimination, I often cannot stop or control my worrying.

11. Due to past experiences of discrimination, I often find that being embarrassed or looking stupid are one of my worst fears.

12. Due to past experiences of discrimination, I often become easily annoyed or irritable.

13. Due to past experiences of discrimination, I often feel constantly on guard, watchful, or easily startled, especially around certain people or places.

14. Due to past experiences of discrimination, I often feel so restless that it is hard to sit still.

15. Due to past experiences of discrimination, I feel the world is an unsafe place.

16. Due to past experiences of discrimination, in social situations I feel a rush of intense discomfort, and may feel my heart pounding, muscles tense up, or sweat.

17. Due to past experiences of discrimination, I feel isolated and set apart from others.

18. Due to past experiences of discrimination, I avoid certain situations or speaking to certain people.

19. If I think about past experiences of discrimination, I cannot control my emotions.

20. Due to past experiences of discrimination, I am nervous in social situations, and am afraid people will notice that I am sweating, blushing, or trembling.

21. Due to past experiences of discrimination, fear of social situation causes me a lot of problems in my daily functioning.

Scoring:
Total scores are calculated by summing all responses. Higher scores indicate greater feelings of distress.

Rosenberg Self-Esteem Scale

(Rosenberg, 1965)

4-point rating scale from 1 (Strongly disagree) to 4 (Strongly agree)

Instructions: Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1. On the whole, I am satisfied with myself
2. At times I think I am no good at all
3. I feel that I have a number of good qualities
4. I am able to do things as well as most other people
5. I feel I do not have much to be proud of
6. I certainly feel useless at times
7. I feel that I'm a person of worth, at least on an equal plane with others
8. I wish I could have more respect for myself
9. All in all, I am inclined to feel that I am a failure
10. I take a positive attitude toward myself

Scoring:

Items 2, 5, 6, 8, 9 are reverse scored. Sum scores for all items. Higher scores indicate higher self-esteem.

Positive and Negative Affect Schedule

(Watson et al., 1988)

5-point rating scale from 1 (Very slightly or not at all) to 5 (Extremely)

Instructions: Indicate the extent you have felt this way over the past week.

1. Interested
2. Distressed
3. Excited
4. Upset
5. Strong
6. Guilty
7. Scared
8. Hostile
9. Enthusiastic
10. Proud
11. Irritable
12. Alert
13. Ashamed
14. Inspired
15. Nervous
16. Determined
17. Attentive
18. Jittery
19. Active
20. Afraid

Scoring:

Positive affect score; Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher levels of positive affect.

Negative affect score: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower levels of negative affect.

Appendix M: Debriefing – Study 5

Weight-Related Experiences in Everyday Life

This form will explain to you in more detail the purpose of the study. The study you just completed was a preliminary investigation of a new scale to assess experiences of fat microaggressions. Microaggressions are subtle, everyday acts that demean a target on the basis of their membership to a stigmatized group. Fat microaggressions target a person because of their weight.

The study in which you just participated is an attempt to construct and validate a new scale, the Fat Microaggressions Scale, for use in psychological research.

If participating in this study has caused you any distress or discomfort, please be aware that the researchers of this study are available to answer questions and discuss the purposes of the research further. By participating in this study, you have contributed to results that will help better understand people's experiences of fat microaggressions.

We are here to answer any questions you may have about the study. Please feel free to contact Megan Lindloff [redacted], Dr. Rachel Calogero [redacted], or Dr. Angela Meadows [redacted]. If you have questions about your rights as a research subject, you should contact the Director of the Office of Human Research Ethics at Western University [redacted].

Thank you again for your time and participation – it is greatly appreciated!

Megan Lindloff, Dr. Angela Meadows, and Dr. Rachel Calogero (Principal Investigator)

If you do feel any distress or discomfort from the survey, you may utilize the resources below:

- **Canada**: Crisis Services Canada- Call [redacted] or text [redacted]. https://www.crisisservicescanada.ca/en/
- **UK**: Samaritans- Call [redacted]. https://www.samaritans.org/

For further information, you may find the following readings of interest:
Resource page on website of Association for Size Diversity and Health (ASDAH). (https://www.sizediversityandhealth.org/what-we-do/) ASDAH provides a list of books, articles, websites, audio-visual materials and other content on a wide range of subjects included body image, nutrition/diet, mental health, physical health, disordered eating, and eating disorders

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

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.62.4.2

Curriculum Vitae

Name:	Megan Lindloff
Post-secondary Education and Degrees:	University of St. Thomas St. Paul, Minnesota, USA 2016–2020 B.S.
	The University of Western Ontario London, Ontario, Canada 2020–2022 M.Sc.
Honours and Awards:	Leola E. Neal Award for Most Outstanding Master's Thesis 2022
	Western Graduate Research Award ($200 CAD) 2022
	Western Graduate Research Award ($750 CAD) 2021
	University of St. Thomas Young Scholars Grant ($4500 USD) 2019
Related Work Experience	Teaching Assistant The University of Western Ontario 2021–2022
	Graduate Advisor Western Undergraduate Psychology Journal Western University 2021–Current

Publications & Presentations:

Lindloff, M. R., & Meadows, A. (2022). Assessment of weight-related stigmatization. In Assessment of Eating Behavior, A Meule (ed). European Association of Psychological Assessment book series. Hogrefe. Submitted for publication.

Lindloff, M. R., Meadows, A., & Calogero, R. M. (2022, February). "Have You Tried Losing Weight?": A Novel Fat Microaggressions Scale. Poster presented at the annual meeting of the The Society for Personality and Social Psychology, San Francisco, CA.

Lindloff, M. R., Meadows, A., & Calogero, R. M. (2021, August). "Have You Tried Losing

Weight?": A Novel Fat Microaggressions Scale. Paper presented at the annual meeting of the Society for the Psychological Study of Social Issues, Virtual.

Lindloff, M. R. (2020, April). Does Instagram Mean Instant Anxiety? Social media, biased attention, and body image. Poster accepted at the annual meeting of the Midwestern Psychological Association, Chicago, IL. (Conference cancelled due to COVID-19)

Lindloff, M. R., Checkalski, O., & Schuchard, K. (2020, April). Smells like success: Gendered perceptions of scent and leadership. Poster accepted at the annual meeting of the Midwestern Psychological Association, Chicago, IL. (Conference cancelled due to COVID-19)

Polusny, M., Erbes, C., Marquardt, C., Noel, V., Hubbling, M., Filetti, C., Gordon, A., Jensen, A., **Lindloff, M. R.**, Pérez-Greene, E., Salazar, J., & Schneider, C. (2019, November). Advancing Research on Mechanisms of Resilience (ARMOR): A multi-level longitudinal cohort study of new military recruits. Poster presented at the annual meeting of the International Society for Traumatic Stress Studies, Boston, MA.

Lindloff, M. R. (2019, October). Does Instagram mean instant anxiety? Social media, biased attention, and body image. Poster presented at the annual Inquiry Poster Session at the University of St. Thomas, St. Paul, MN.

Lindloff, M. R., Thiesen, V., Nickoloff, K., & Dowling, K. (2019, April). Does higher power suggest higher order perception? The role of religion, religiosity, and global precedence. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

Dilling, A., Ortman, H. & **Lindloff, M. R.** (2018, April). Mindfulness practices and academic anxiety in college students. Poster presented at the Minnesota Undergraduate Psychology Conference, Northfield, MN.