EXPRESSING DISEMPOWERING REALITIES THROUGH THE BODY: AN EMBODIMENT APPROACH TO DISORDERED EATING IN BLACK AND AFRICAN AMERICAN WOMEN

by

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DISSERTATION ABSTRACT

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Title: Expressing Disempowering Realities Through the Body: An Embodiment Approach to Disordered Eating in Black and African American Women

Disordered eating (DE) among Black women in the United States (U.S.) has increased over the past decade. Although theories of DE have predominantly focused on the drive for thinness, these frameworks fail to demonstrate the same predictive validity among Black women. Embodiment, which reflects the experience of living in one's body, offers a novel framework for examining DE among Black women by considering the roles of disempowering social experiences (e.g., discrimination) in shaping how one connects to and cares for their body.

The current study examined the associations among food insecurity, exposure to traumatic events, discrimination distress, embodiment, and DE (i.e., global symptoms, binge eating, and unhealthy weight control practices). It was hypothesized that food insecurity, traumatic events, and discrimination distress would be collectively significantly associated with both embodiment and DE. It was also hypothesized that embodiment would be significantly negatively associated with DE after adjusting for food insecurity, traumatic events, and discrimination distress. Black women 18 to 40 years old in the U.S. ($N = 99$; $M_{age} = 27.77 \pm 5.17$ years) completed an online survey comprising measures of food insecurity, traumatic events, discrimination distress, embodiment, and DE.

Multiple regression models revealed that food insecurity, traumatic events, and discrimination distress were collectively significantly associated with embodiment ($p < .001$) and

global DE ($p < .001$). Zero-inflated negative binomial models demonstrated improved model fit compared to the intercept-only models for binge eating (BF = 1.63) and unhealthy weight control practices (BF = 146×10^4). Considering individual variable contributions, exposure to traumatic events was significantly positively associated with global DE and likelihood of binge eating; food insecurity was significantly negatively associated with global DE; and discrimination distress was not significantly related to any DE constructs (ps = .137-.620). After adjusting for food insecurity, traumatic events, and discrimination distress, embodiment was significantly negatively associated with global DE ($p < .001$), the likelihood of binge eating (p =.01), and unhealthy weight control practices (p =.03).

Results suggest that disempowering social experiences are relevant to Black women's DE, and embodiment may provide a valuable theoretical perspective for understanding DE in Black women.

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Metcalfe, R., **Osa, M. L.,** Jones, J., & DeGarmo, D. (2022). Emotion regulation, coercive parenting, and child adjustment: A serial mediation clinical trial. *Clinical Practice in Pediatric Psychology*, *10(*3*)*, 295–306. https://doi.org/10.1037/cpp0000451

Osa, M., Bunn, L., Giuliani, N., & Kelly, N. (2021). Associations among weight-based teasing distress, impulsive emotion regulation, and loss of control eating in racially and ethnically diverse young men. *Eating Behaviors*, *43*. https://doi.org/10.1016/j.eatbeh.2021.101543

Osa, M. L., Siegel, J., Meadows, A., Elbe, C., & Calogero, R. M. (2021). Stigmatizing effects of weight status on lay perceptions of eating disorder-related distress. *Eating Disorders*, *0*(0), 1–11. https://doi.org/10.1080/10640266.2020.1855571

Osa, M. L., & Kelly, N. R. (2021). Experiences of discrimination are associated with drive for muscularity among African American men. *Psychology of Men & Masculinities, 22*(2), 365–374. https://doi.org/10.1037/men0000287

Bruchmann, K., **Osa, M. L.,** Wong, K., & Baerg, L. (2021). Construal level moderates a local dominance effect of appearance comparisons in undergraduate women. *Journal of Applied Social Psychology*. https://doi.org/10.1111/jasp.12819

Muruthi, J., Green, A., Ehlinger, P., **Osa, M. L.,** & Yang, D. (2021). Sociodemographic, health, and caregiving patterns of aging caregivers in Oregon: Gender comparisons and the role of leisure activities. *The International Journal of Aging and Human Development*, 009141502110404. https://doi.org/10.1177/00914150211040458

Muruthi, J. R., Spafford, S. G., **Osa, M. L.,** DeLouize, A., Kowal, P., Biritwum, R., & Snodgrass, J. J. (2021). Suicidal ideation in older Ghanaian women: The roles of bodily pain, functional limitation, and chronic health conditions. *International*

Journal of Social Psychiatry.
https://doi.org/10.1177/0020764021991179

Williamson, G., **Osa, M. L.,** Budd, E., & Kelly, N. R. (2021). Weight-related teasing is associated with body concerns, disordered eating, and health diagnoses in racially and ethnically diverse young men. *Body Image*, *38*, 37–48. https://doi.org/10.1016/j.bodyim.2021.03.010

Osa, M. L. & Calogero, R.M. (2020). Orthorexic eating in women who are physically active in sport: A test of an objectification theory model. *Body Image. 35,* 154–160. https://doi.org/10.1016/j.bodyim.2020.08.012

Osa, M. L. & Bruchmann, K. (2019). The effects of health frame and target relevance in appearance social comparisons. *Journal of Applied Social Psychology*, *49*(1), 27–35. https://doi.org/10.1111/jasp.12562

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CHAPTER I

INTRODUCTION

Eating Disorders and Disordered Eating

Eating disorders, such as anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED), are psychiatric conditions characterized by severe and persistent disturbances in eating behaviors; distressing cognitions and emotions; and impairments in daily functioning (American Psychiatric Association, 2013). Rates of disordered eating (DE) attitudes and behaviors, such as binge eating, weight and shape concerns, and unhealthy weight control practices (e.g., restrictive eating behaviors, compulsive exercising, self-induced vomiting), are significantly more common than full threshold eating disorders (Harrelson et al., 2013). DE differs from clinical eating disorders in terms of the frequency and intensity of their associated cognitions and behaviors (e.g., hallmark behaviors occurring multiple times a week versus daily; Zucker & Pollack, 2021). Nonetheless, DE is cross-sectionally and prospectively associated with numerous deleterious conditions including hormonal imbalances, osteoporosis, depression, psychological distress, onset of clinical eating disorders, and suicide (Himmerich et al., 2021; Kärkkäinen et al., 2018; O'Brien et al., 2017). As such, even without meeting clinical diagnostic criteria, DE confers a profound impact on an individual's physical and psychological quality of life (Wade et al., 2012).

Disordered Eating, Black Women, and Theory

Although documented across all ethnic and racial groups (Hudson et al., 2007; Sala et al., 2013; Sonneville & Lipson, 2018; Swanson et al., 2011), DE remains understudied, overlooked,

and undertreated among Black[1] women in the United States (U.S.; Burnette et al., 2022; Gilbert, 2006; Gordon et al., 2002). Historically, it has been assumed that DE selectively afflicts thin, non-Hispanic White, affluent women (Cachelin & Striegel-Moore, 2006; Smolak & Striegel-Moore, 2001). Compounding this stereotype is an empirical emphasis on group comparisons of body dissatisfaction and dieting between Black and non-Hispanic White girls and women (e.g., Baugh et al., 2010; Pike et al., 2001). These studies emphasize that, compared to non-Hispanic White women, Black women report significantly less weight and shape concerns and restrictive eating behaviors. However, such comparative methodology conveys deceiving conclusions, whereby group differences obscure the extent and impact of DE amongst Black women (Grabe & Hyde, 2006; Lowy et al., 2021). Though evidence exists that DE characterized by dieting and restriction is, indeed, more common among non-Hispanic White women than among women of marginalized racial and ethnic groups, notable variability exists within these communities (Baugh et al., 2010). For example, while Black women may be less likely to diet (Shuttlesworth & Zotter, 2011; Striegel-Moore et al., 2000), some data suggest that binge eating is more prevalent among Black women (Goode, Cowell, et al., 2020; Marques et al., 2011; Striegel-Moore et al., 2000). Further, the accuracy of the estimated rates of DE may be limited by the stigma and shame that prevent Black women from admitting the magnitude of their eating and body-related distress (Becker et al., 2010).

Decades of multidisciplinary research suggests that no single theory accounts for the complex origin and development of DE. Perhaps the most universally recognized model of DE is

[1] The terms "Black" and "African American" are often used interchangeably to represent a broader racial group; however, this paper will use the term "Black" to refer to women identifying with Black or African culture. This terminology is employed given that some women do not identify as "African American" because they either immigrated to the United States or may identify with their countries of origin (Lowy et al., 2021). Regardless of their country of origin, Black female bodies are stigmatized and marginalized; thus, both "Black" and "African American" identities are included in this study.

that which focuses on thin-ideal internalization – the extent to which an individual adopts the societal belief that attractiveness is rooted in thinness – as the hallmark risk and maintenance factor for DE among women (Stice et al., 1994; Thompson & Stice, 2001). It is theorized that the desire to attain a thinner body size precipitates body dissatisfaction and unhealthy weight control practices, which increase risk for binge eating (Thompson & Stice, 2001). Alternatively, scholars have posited that DE behaviors, such as binge eating and restriction, arise as a means to regulate negative affect (e.g., depressed mood) and/or to escape from the distress of failing to meet societal standards of beauty (Gershuny & Thayer, 1999; Heatherton & Baumeister, 1991). Although evidence exists that negative affect precedes binge eating among non-Hispanic White women, it appears that the act of binge eating does not produce a regulatory function (Haedt-Matt & Keel, 2011). Furthermore, there are mixed findings regarding the significance of negative affect to binge eating among Black women (Goode et al., 2020; Goode, Kalarchian, et al., 2020; Harrington et al., 2006, 2010). Based on these frameworks, the dominant viewpoint within clinical psychology asserts that Black women are at lower risk for DE given that, relative to non-Hispanic White women, they prefer a fuller body figure (Antin & Hunt, 2013; Hernández & Rehman, 2002; Overstreet et al., 2010) and are less likely to suffer from poor body image and depressive symptoms (Barnes & Bates, 2017; Williams et al., 2007).

Importantly, these longstanding theories were developed from and validated in clinical samples of primarily non-Hispanic White women (Burnette et al., 2022; Hart et al., 2011; Lowy et al., 2021). Inherent to these perspectives is the assumption that the drive for thinness and depressed affect are foundational to the development of DE, without consideration for the unique psychological, sociopolitical, and structural forces ingrained in Black women's subjective experience of their bodies (Lowy et al., 2021; Small & Fuller, 2020). The intersectional social

location of Black women is embedded with distinct stressful bodily experiences, beyond weight and appearance, which may increase vulnerability to DE. Beginning with colonization, White supremacy has been upheld by inhumane conditions that promote the systematic violation and degradation of Black female bodies (Lowy et al., 2021; Strings, 2019). Throughout history Black women have also been victimized by racially-based objectification labeling their bodies as "inferior" in terms of skin tone, intelligence, hair texture, facial features, and body size, which may augment risk for DE (Dunn et al., 2019; Small & Fuller, 2020; Strings, 2019; Wilfred & Lundgren, 2021). Thus, Black women's relationships with their bodies exist within cultural circumstances built upon ideologies that communicate demeaning messages about their value, attractiveness, and worth (Beauboeuf-Lafontant, 2003).

Today, the persistence of oppression is evident in the way Black women are routinely subjected to adverse experiences and unjust institutions that reinforce disempowerment and bodily disconnection (Lowy et al., 2021; Thompson, 1996). Because marginalization is upheld across multiple levels of inequity, there is little capacity for Black women to speak openly about their bodily distress (Beauboeuf-Lafontant, 2003). Clinical work illustrates the psychological and behavioral consequences of Black women's silencing, such that many turn to food as a self-reliant way to address the bodily disconnection which occurs in a society designed to control their movement through the world (Mitchell & Herring, 1998; Small & Fuller, 2020). Following interviews with Black women with DE, Thompson (1994) notes that the "*origin of eating problems has little or nothing to do with appearance but is a survival strategy in response to myriad injustices, including racism, classism, poverty, and emotional, physical, and sexual abuse*." Through this lens, it is clear that a primary emphasis on risk factors related to appearance is a disservice to Black women struggling with DE. Without quantitative validation of culturally

responsive theories to explain Black women's DE, researchers and clinicians remain unequipped to adequately address the bodily distress and needs of this marginalized community. Effectively including Black women in DE narratives relies on contextualizing DE within a labyrinth of inequities rather than a simple emphasis on preoccupation with thinness. Thus, the intention of this work is to highlight three specific stressors that influence how Black women experience and connect to their bodies in the world: food insecurity, exposure to traumatic events, and interpersonal discrimination. These experiences will then be embedded within a theoretical framework of embodiment which may offer a culturally responsive and critical understanding of Black women's DE.

Food Insecurity

Systemic racial oppression, whereby institutions, policies, and structures control and withhold resources from people of color, such as wealth, housing, education, employment opportunities, transportation, and healthcare access, relegates many Black Americans to unsafe and impoverished conditions (Weber, 1998; Williams & Rucker, 2000). Black women, in particular, are tyrannized by the systemic nature of racism in the U.S. They remain among the lowest-paid populations across every branch of the workforce, with pay averaging approximately 50 cents for every dollar paid to non-Hispanic White men (American Association for University Women, 2022). One critical outcome of this long-standing financial disparity is food insecurity, referring to limited or uncertain means to access nutritious food in a safe and socially acceptable manner (Coleman-Jensen et al., 2022). Food insecurity status is measured on a continuum ranging from *consistent access to adequate food* (i.e., high food security) to *reduced food intake on the basis of limited access to adequate food* (i.e., high food insecurity; Coleman-Jensen et al., 2022). Food insecurity disproportionately impacts individuals of marginalized racial and ethnic

groups and is associated with hypertension, cardiac disease, and depressive symptoms (Patterson et al., 2020; Weaver & Fasel, 2018).

Historically, it has been assumed that DE is an issue that only exists among affluent individuals in locations with high food availability (Sonneville & Lipson, 2018). Etiological models of DE frequently reflect this belief, such that most risk and attenuating factors pertain to body dissatisfaction rather than environmental circumstances (Hazzard et al., 2020). By contrast, individuals with food insecurity may engage in DE behaviors for reasons other than altering their appearance. For instance, a cycle of available versus unavailable food access (e.g., before and following monthly pay) may provoke extreme fluctuations in food intake, such as skipping meals in periods of scarcity and binge eating in periods of stability (Dinour et al., 2007). This is consistent with a recent review (Hazzard et al., 2020) which found that greater food insecurity was cross-sectionally associated with higher levels of DE psychopathology (e.g., binge eating, laxative use), as well as threshold BN and BED diagnoses among adults. These findings remained significant after adjusting for socioeconomic status.

Aggregated data from across the U.S. indicate that Black women have the highest levels of food insecurity compared to non-Hispanic White, Asian, and Latina adults 5/24/23 6:04:00 PMAlthough there are scarce data regarding the relationship between food insecurity and DE specifically among Black women, a study of highly food insecure individuals in the U.S. demonstrated that more than 50% of Black female participants reported unintentional fasting, deliberate restriction, and meal skipping (Becker et al., 2017). It has also been suggested that the psychological distress of food insecurity may lead to DE among Black women (Malson & Burns, 2009). Anecdotes from clinical work and qualitative interviews substantiate this notion (Bernard, 2019; Malson & Burns, 2009). For example, in addition to restricting their intake to extend

resources, Black women describe binge eating as a physically and emotionally satisfying response to financial instability when food becomes available (Small & Fuller, 2020; Thompson, 1996). Evidently, these data elicit uncertainty concerning the efficacy and accuracy of leading DE theories for not recognizing the relevance of food insecurity to Black women's experience of their bodies and eating behaviors.

Traumatic Events

Traumatic events (e.g., sexual assault, abuse, neighborhood violence) may further render Black women more susceptible to developing DE. A traumatic event occurs when an event is perceived as emotionally or physically harmful or threatening and confers prolonged deleterious effects on an individual's well-being (Magruder et al., 2017; Schnurr & Green, 2004). A large body of cross-sectional research connects exposure to traumatic events to DE and prospective data indicate that traumatic events predict the future development of DE symptomology among children and adults in the U.S. (60% non-Hispanic White, 40% marginalized racial and ethnic groups; Briere & Scott, 2007; Zelkowitz et al., 2021). The significant association between exposure to traumatic events and DE is ubiquitous across a range of behaviors, including binge eating, restriction, and self-induced vomiting (Malecki et al., 2018; Palmisano et al., 2016; Yoon et al., 2022).

Compared to non-Hispanic White girls and women, the prevalence of exposure to one or more traumatic events is substantially higher among Black girls and women, with rates as high as 91% in low-income Black communities in the U.S. (Gluck et al., 2021; Powers et al., 2021). Similarly, approximately 38% of Black women report at least one experience of sexual violence (e.g., sexual assault, sexual abuse) in their lifetime, and the prevalence of this traumatic event is likely substantially higher due to underreporting and distrust of authorities (Breiding, 2014;

Malson & Burns, 2009; Middlemass et al., 2020). Cross-sectional research demonstrates a positive association between trauma exposure and binge eating among Black women (Harrington et al., 2006, 2010). Further, life history interviews with African American women delineate a direct connection between exposure to traumatic experiences (e.g., sexual assault, racially-motivated violence) and multiple forms of DE (e.g., binge eating, dieting; Thompson, 19945/24/23 6:04:00 PM5/24/23 6:04:00 PM). However, the mechanism connecting exposure to traumatic experiences to DE among Black women is uncertain. Although affect regulation is considered the leading explanation for the link between trauma history and DE, prior work suggests this model does not hold the same predictive validity for Black women compared to non-Hispanic White women (Harrington et al., 2006). Taken together, these studies suggest that trauma exposure is an important factor related to Black women's DE and it is vital to elucidate other possible pathways underlying the association between trauma exposure and DE.

Interpersonal Discrimination

At the interpersonal level, social disempowerment frequently manifests as discrimination – the unfair treatment by others on the basis of one's social group membership – and can include harassment, ostracism, victimization, and prejudicial microaggressions (Grollman, 2012). The overwhelming majority (i.e., 75-90%) of Black individuals in the U.S. report experiencing interpersonal racial discrimination (Fani et al., 2021; Helms et al., 2012; Lee et al., 2009). Black women endure exponential stress as targets of both racial and gender discrimination due to their intersectional identity, resulting in notable short and long-term effects on their psychological (e.g., depressive symptoms, anxiety) and physical health (e.g., reproductive outcomes, breast cancer; Black et al., 2015; Brownlow et al., 2019; Dale et al., 2019; Greer, 2011; Jones et al., 2007; Lieberman et al., 2021; Taylor et al., 2007). More frequent experiences with

discrimination are also related to higher DE psychopathology among individuals belonging to marginalized racial, ethnic, sexual orientation, gender, and weight categories, regardless of the specific symptoms or age of the individual (for a review, see Mason et al., 2021) – and Black women are no exception.

Quantitative and qualitative research demonstrate a link between racial discrimination and DE in Black women in the U.S. (e.g., Assari, 2018). For example, experiences with racial discrimination have been positively related to binge eating (Assari, 2018; Harrington et al., 2006) and emotional eating in samples of Black women (Longmire-Avital & McQueen, 2019). Furthermore, self-hatred of African American group membership (i.e., internalization of racial discrimination) was positively associated with DE behaviors (e.g., binge eating, laxative use) among young African American women in the Southeastern U.S. (Flowers et al., 2012). In interviews, Black women described engaging in binge eating and dietary restriction in response to fear and anxiety for their personal safety due to prior discriminatory encounters (Thompson, 1996). Both subjective chronic stress and stress from recent life events have been proposed as mechanisms connecting racial discrimination to DE; yet, cross-sectional findings suggest that neither of these factors significantly mediate the association between discrimination and binge eating among Black women (Harrington et al., 2006). As such, experiences with interpersonal discrimination, with greater attention to mediating mechanisms, must be included in theoretical models to foster a more accurate and holistic conceptualization of DE among Black women.

The Developmental Theory of Embodiment

Recognizing the unique intersecting challenges faced by Black women in the U.S., scholars and activists have advocated for culturally sensitive frameworks to explain the development and maintenance of DE psychopathology (Burke et al., 2020; Lowy et al., 2021).

One promising framework that responds to these appeals is the experience of embodiment. The concept of embodiment originated from philosophical teachings describing the subjective experience of a person's capacity to connect to their bodies within the context of one's social environment (Merleau-Ponty, 1992). This expanded view of bodily experience became the foundation of Piran's (2017) decade-long embodiment qualitative research program, consisting of 171 interviews and 116 focus groups with girls and women from diverse racial, socioeconomic, geographic, health, and sexual orientation backgrounds on bodily distress and their relation to social circumstances. The interviews were conducted in North America across three studies with participants ranging in age from nine to 68 years old (see Piran, 2016, 2017, for further details on study methodology). The results of this work informed the construct of "embodiment" and identified the cultural factors that mold its experience across the lifespan (Piran, 2017). Central to these experiences were factors such as race and ethnicity, physical ability, class, gender expression, sexuality, and weight. Thus, embodiment is multidimensional and is not exclusively about the appearance of the body. Instead, embodiment reflects the psychological connection to and care for the body as it pertains to one's social identities and the environmental conditions which shape this experience (Piran, 2017).

The developmental theory of embodiment (DTE; Piran, 2017; Piran & Teall, 2012) defines embodiment as a spectrum that ranges from positive, described as a connection to one's body characterized by agency, comfort, and self-care, to negative, described as a disrupted connection to one's body characterized by powerlessness, self-harm, and neglect (Piran, 2017). Unlike appearance-based frameworks, the DTE emphasizes the social power and relational forces (e.g., discrimination, traumatic events), beyond cultural beauty standards, that contribute to how one perceives and cares for their body, such as through eating and exercise behaviors

(Piran, 2017). Although still in its infancy, recent quantitative research investigating corelates of embodiment contributes growing support for its relevance to DE among women. For example, during the psychometric evaluation of the 34-item Experience of Embodiment Scale (EES), girls and women (100% Canadian; 72% non-Hispanic White) with lower scores of embodiment (i.e., disrupted embodiment) also reported higher DE attitudes. In the same study, higher embodiment scores (i.e., positive embodiment) were significantly associated with greater body and self-esteem, lower body surveillance (i.e., compulsively examining the appearance of one's body), greater body connection, and fewer depressive symptoms (Piran et al., 2020). Similarly, the Swedish translation and validation of the EES found embodiment to be significantly and positively correlated with body esteem and self-esteem and significantly and negatively correlated with internalization of thin appearance ideals, DE, drive for muscularity, and psychological distress among adult men and women (70% Swedish, 30% immigrants to Sweden; Kling et al., 2021). The significant associations between embodiment and DE illustrate the potential importance and breadth of embodiment in how one experiences and cares for their body. However, most quantitative studies examining embodiment predominantly comprise non-Hispanic White women (e.g., Kling et al., 2021; Piran et al., 2020), and the association between embodiment and DE has not been examined among Black women in the U.S.

Racial Oppression, Embodiment, and Disordered Eating

The DTE offers a framework for understanding how social location and varying experiences of oppression impede possibilities for bodily comfort and agency and the subsequent development of DE among Black women (Piran, 2017). Independently, food insecurity, exposure to traumatic events, and discrimination distress are identified as risk factors for DE among Black women (Harrington et al., 2010; Hazzard et al., 2020; Piran & Teall, 2012; Zelkowitz et al.,

2021), but the process connecting these experiences to DE remains unclear. The DTE unites these varying levels of racial oppression by designating them as experiences that collectively exemplify social disempowerment, such as exposure to prejudicial treatment, limited access to resources, membership in inequitable communities, and adverse interpersonal relationships (Piran, 2017). Unlike appearance-based models of DE, the DTE calls attention to the influence of structural and interpersonal aspects of social disempowerment on embodiment quality and subsequent embodied (e.g., self-care) or disembodied (e.g., DE) practices. Generally, a woman's embodied experiences of feeling grounded in her body and being attuned to her affective and physical sensations are important in the prevention of DE (Malecki et al., 2018; Piran & Teall, 2012). For Black women, living in a society that systematically dismisses, belittles, and disempowers them limits opportunities to adaptively respond to such sensations (Beauboeuf-Lafontant, 2003). When the body is perceived as governed by external forces, and the result is physical and psychological harm, an individual may attempt to exert control over or distance themselves from the body through food (Malecki et al., 2018).

Indeed, a common narrative expressed by Black women with trauma history is feeling a loss of ownership over their bodies (Thompson, 1994). In these accounts, Black women depict DE behaviors as a mechanism to face the enduring sensations of violated bodily boundaries (Thompson, 1994). For instance, one participant described binge eating as "*the cave, the boundary, the barrier, safety, and the buffer*" from their own body following parental physical and sexual abuse. Traumatic events such as sexual assault and racially-motivated violence can heighten negative self-image and lead the body to be viewed as a site of powerlessness, betrayal, and mistrust (Madowitz et al., 2015; Piran, 2017). DE behaviors may, therefore, emerge as an attempt to cope with disrupted embodiment by dissociating from or altering the site of the

traumatic experience (i.e., the body). A focus on embodiment uncovers how the search and desire for bodily connection amidst the disproportionate presence of trauma oppressing Black female bodies takes the form of DE.

Likewise, the traumatization embedded in discriminatory experiences may be central to disrupted embodiment and the subsequent development of DE among Black women. As a physical target, discrimination transforms the experience of living in and connecting to the body to one of intense anguish and trepidation (Williams et al., 2018). Residual effects such as increased anxiety and dissociation are characteristics that are incompatible with body connection and comfort and are also correlated with DE (De Maynard, 2010; Piran, 2017; Williams et al., 2018). Recent data from neuroimaging studies support the disembodied impact of discrimination, such that more frequent experiences of racial discrimination are associated with greater response activity in brain regions associated with hypervigilance and threat assessment among Black women (Fani et al., 2021). Qualitatively, Black women in the U.S. describe engaging in binge eating and purging (e.g., laxative use) cycles to manage the sense of uneasiness in their bodies related to fear from prior discriminatory encounters (Thompson, 1996). Evidently, the emotional toll of discrimination prevents Black women from moving through the world with agency and security, both of which are vital to positive embodiment (Crenshaw, 1991; Piran, 2017). The context of the emergence of these behaviors suggest that Black women are not impervious to the development of DE. However, in contradiction to existing theories, the underlying motivation may reflect a strategy for Black women to reestablish body comfort, such as through binge eating, or exert bodily agency, such as through unhealthy weight control practices.

While the appetite for safety and validation among Black women is powerful, so are the systemic barriers to its fulfillment. Invariable access to nutritious food is considered essential to

embodiment (Piran, 2017). Without it, food insecure individuals may be hindered from responding intuitively to their body's needs and desires, a critical aspect of maintaining positive embodiment, adaptive eating behaviors, and overall health (Van Dyke & Drinkwater, 2014). For instance, even when feeling hungry, an individual may be forced to limit or completely restrict their food intake when food is not readily available (Malson & Burns, 2009; Middlemass et al., 2020). Food insecure individuals may also feel that they are devoid of agency in providing for themselves and engage in restrictive eating behaviors to gain internal control over their bodies, mirroring a psychological deprivation driven by body image concerns but in fact is precipitated by bodily disconnection (Hazzard et al., 2020). This may be particularly true for Black mothers who choose to put their children's needs before their own (Harrington et al., 2010). As such, food insecurity may shift Black women's relationships with their bodies from one of attuned connection to involuntary neglect, thereby disrupting embodiment and driving the development of DE.

Summary

The conceptualization of DE as purely an appearance issue contributes to the widespread invalidation of social conditions and overreliance on individual experiences in understanding DE among Black women in the U.S. Examining DE as an artifact of racial oppression and social disempowerment, the DTE provides a pathway for understanding how culturally relevant stressors, such as food insecurity, exposure to traumatic events, and distress from discrimination are related to DE in Black women. Indeed, these factors are implicated as key social power experiences that negatively influence embodiment quality, such as prejudicial treatment (i.e., discrimination), disempowering relationships and disconnection (i.e., traumatic events), and inequitable access to resources (i.e., food insecurity; Piran, 2017). Although previous research

has demonstrated significant positive associations between these factors and DE pathology among Black women, the mechanism underlying these associations remains unclear (Hazzard et al., 2020; Madowitz et al., 2015; Mason et al., 2020).

The combination of these experiences exemplifies social disempowerment and disconnection and delineates how they operate in unison to disrupt Black women's embodiment. In turn, this disrupted embodiment may contribute to disembodied practices, such as engagement in DE behaviors, in Black women. On the surface, lower levels of body dissatisfaction appear to protect Black women from DE. However, a focus on appearance-based mechanisms may be masking the distress and disconnection that occurs while inhabiting bodies that are exploited, targeted, and overburdened. A comprehensive understanding of Black women's DE is unattainable until the weight of racial oppression in Black women's body and eating-related distress is acknowledged. Thus, the present study seeks to expand the limited knowledge of Black women's experiences by prioritizing factors tied to interpersonal and system-level inequality, rather than appearance, in the investigation of DE.

Study Aims and Hypotheses

The primary aim of the current study is to provide a quantitative investigation of the DTE as it pertains to varying forms of racial oppression and DE among Black women in the U.S. Piran's (2017) qualitative research program revealed that emerging and young adulthood (~18-40 years) are sensitive periods in the development of embodiment. Women in this age group encounter numerous transitions, such as location of residence, friendships, romantic relationships, and educational and job opportunities (Potterton et al., 2020). Although these changes can be positive, they also carry an innate sense of instability and negative social experiences may impart a lasting impression on embodiment quality (Piran, 2017). Thus, the

present study will investigate the associations among food insecurity, exposure to traumatic events, discrimination distress, embodiment, and DE in Black women aged 18-40. The current proposal is derived from a larger national survey study examining the physical and psychological heath behaviors and experiences of Black women between the ages of 18 and 40 years old. Ultimately, latent structural equation modeling will be conducted to examine an embodiment model of DE among Black women (see Figure 1). This mediational model examines the combined effect of three specific disempowering experiences on DE through embodiment. To capture both interpersonal and systemic oppression, disempowering experiences will compose a latent construct labeled as "Social Disempowerment and Disconnection", which represents greater food insecurity, more frequent traumatic experiences, and greater distress from discrimination. Data collection for the full target sample ($N = 300$) remains ongoing. As such, the present hypotheses are intended to evaluate the preliminary associations among the main study variables with the available data. Specifically, the current study will investigate the connection between social disempowerment and disconnection with DE with consideration for the unique contribution of embodiment. This approach provides an opportunity to examine the potential utility of studying these associations using latent mediational modeling by testing (a) how factors evident of social disempowerment and disconnection are simultaneously related to embodiment and DE, and (b) how embodiment is related to DE above and beyond these factors. As such, it was hypothesized that:

Hypothesis 1: Food insecurity, traumatic events, and discrimination distress would collectively be significantly and negatively associated with embodiment.

Hypothesis 2: Food insecurity, traumatic events, and discrimination distress would collectively be significantly and positively associated with global DE scores, binge eating, and unhealthy weight control practices.

Hypothesis 3: Embodiment would be significantly and negatively associated with global DE scores, binge eating, and unhealthy weight control practices after adjusting for food insecurity, traumatic events, and discrimination distress.

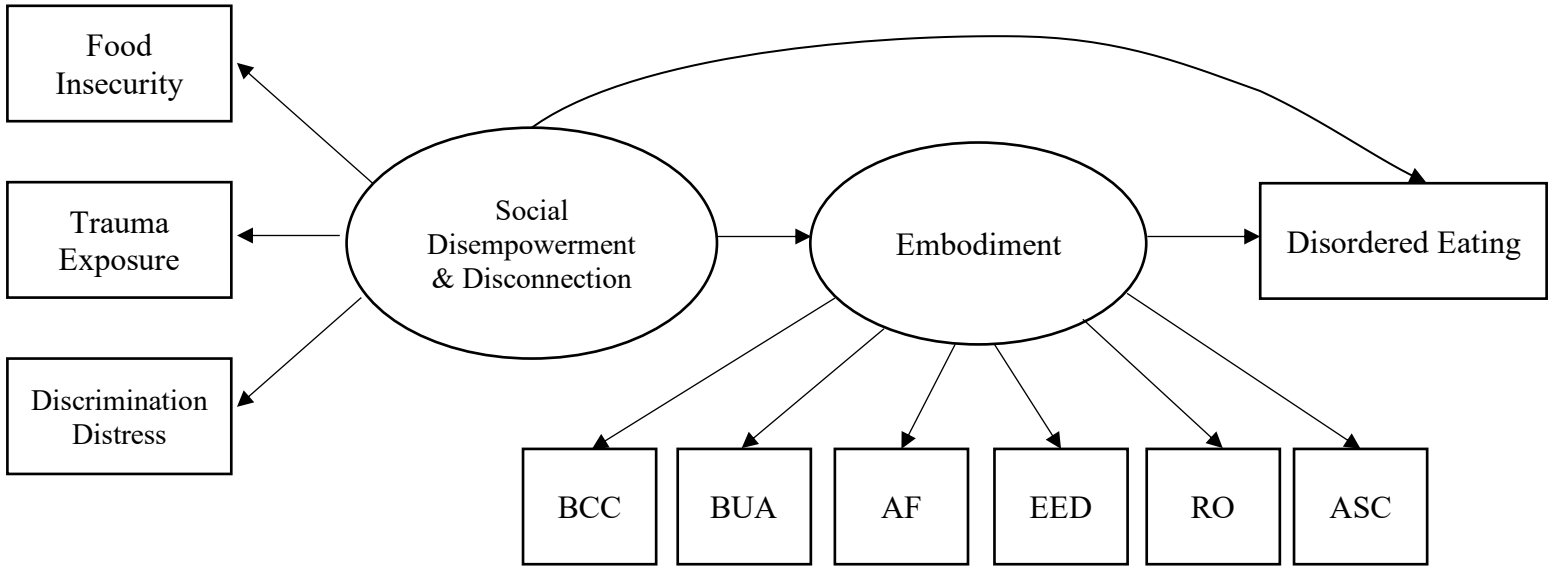

Figure 1. Proposed mediation model connecting the latent construct of social disempowerment and disconnection (comprised of food insecurity, trauma exposure, and discrimination distress) to disordered eating through the experience of embodiment.

Note. Indicators of embodiment represent theorized domains of the experience of embodiment. BCC = Body Connection and Comfort; BUA = Body Unencumbered Adjustment; AF = Agency and Functionality; EED = Experience and Expression of Sexual Desire; RO = Resisting Objectification; ASC = Attuned Self-care.

CHAPTER II

METHOD

Procedures

IRB approval for the current study was obtained from the University of Oregon. Participants were recruited via advertisements in the form of physical flyers at various locations (e.g., community center boards, health offices), email announcements distributed to students at higher education institutions, and posts on online platforms (e.g., social media outlets such as Instagram and Facebook). Advertisements included a brief description of the study's purpose, the expected completion time and task (i.e., a 20–30-minute online survey), and contact information for the research team. Eligibility criteria for the current study included: (1) self-identified as Black or African American; (2) identified as female; (3) self-reported English fluency; and (4) being between the age of 18 and 40 years old. Multiracial participants were eligible if they self-identified with being Black given that the relationship between racial identity and psychological functioning is tied to the social and political impact of self-perceived group membership (Helms & Cook, 1999; Johnson & Arbona, 2006).

Eligible individuals who viewed the advertisements and were interested in participating in the current study were prompted to contact the research team via email. These individuals received a reply reiterating the study's eligibility criteria, a study ID number, and a personalized link to the online survey which is hosted by Qualtrics Survey Platform. After clicking their personalized link, participants viewed a consent page with further details about the study procedures and the potential risks and benefits of participation. Participants indicated consent by selecting a radio button stating "I consent to participate in this study" or non-consent by selecting a radio button stating "I do NOT consent to participate in this study." Consenting participants

were then directed to four questions confirming eligibility (i.e., racial identity, gender identity, age, and English fluency). Participants who did not meet the study's eligibility criteria were immediately directed to the end of the survey and thanked for their time. Eligible participants then proceeded to the online survey. The survey measures were presented in a counterbalanced order with the exception of the demographic questionnaire, which appeared last to prevent the saliency of identity factors from influencing participants' responses (Colton & Covert, 2007). Participants had to complete at least 80% of the survey (Dong & Peng, 2013) to receive compensation in the form of a $25 Amazon eGiftcard. At the end of the survey, participants viewed a page containing general mental health and eating disorder support resources.

Measures

Demographics

Participants self-reported their racial identity, gender identity, current state of residence, sexual orientation, employment status, education level, approximate annual income, immigration status, presence of various chronic health conditions (e.g., diabetes, heart disease, depression, cancer), and height and weight (to calculate BMI in kg/m^2).

Food Insecurity

Food insecurity was assessed with the brief U.S. Adult Food Security Survey Module (Bickel et al., 2000), a 5-item measure assessing an adult's level of food security in the past year. Participants responded to each question (e.g., "In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food?") with "Yes" (coded *1*), "No" (coded *0*), or "Don't know" (coded -*999*). Items are summed with five being the maximum score and indicating greater food insecurity. This survey is a well-established and widely used module to assess food insecurity among individuals of diverse racial and ethnic groups in the U.S.,

including adequate representation of Black individuals, and demonstrates acceptable convergent validity (Marques et al., 2015).

Traumatic Events

Exposure to traumatic events was assessed with the Traumatic Experiences Checklist (Nijenhuis et al., 2002), a self-report measure assessing the frequency and impact of exposure to traumatic events across the lifetime. This survey measures exposure to 29 different traumatic events, including physical (e.g., "Threat to life from illness, an operation, or an accident"), emotional (e.g., "Emotional neglect [e.g., being left alone, insufficient affection] by your parents, brothers, or sisters"), and social (e.g., family poverty) experiences. Participants indicate if they experienced a traumatic event with "Yes" (coded *1*) or "No" (coded *0*). If "Yes" is endorsed, participants rate the impact the event had on them from 1 (*none*) to 5 (*extreme amount*). Consistent with existing literature investigating the measurement of trauma among adults, as well as prior research indicating that more frequent exposure to traumatic events is associated with psychological health and DE among Black women, total exposure frequency scores were used to test the study hypotheses (Harrington et al., 2010; Mekawi et al., 2021; Wilson & Keane, 2004). Items are summed and higher total scores indicate more frequent traumatic experiences. This measure has been used in clinical and nonclinical samples of men and women (Näring & Nijenhuis, 2005; Nijenhuis et al., 2002).

Discrimination Distress

Discrimination distress was assessed with the Trauma Symptoms of Discrimination Scale (Williams et al., 2018), a 21-item self-report measure assessing current anxiety and distress from past general discriminatory experiences. This measure has four subscales: (1) uncontrollable hyperarousal (eight items, e.g., "Due to past experiences of discrimination, I often cannot stop or

control my worrying"); (2) feelings of alienation (six items, e.g., "Due to past experiences of discrimination, I feel isolated and set apart from others"); (3) worries about future negative events (five items, e.g., "Due to past experiences of discrimination, I often feel afraid as if something awful might happen"); and (4) perceiving others as dangerous (two items, e.g., "Due to past experiences of discrimination, I often feel constantly on guard…"). Participants indicate the extent to which each statement captures their experience from 1 (*never*) to 4 (*often*). A total discrimination distress score was used in the current study and created by calculating an average across all 21 items. Higher scores indicate greater anxiety and distress from past general discriminatory experiences. Prior research suggests that scale's items demonstrate good estimated internal consistency ($\alpha = .91$) and validity among African American men and women (Williams et al., 2018). Cronbach's alpha for the items that comprise the overall scale indicated good estimated internal consistency ($\alpha = .96$) in the current study's sample as well.

Embodiment

Embodiment was assessed with the Experiences of Embodiment Scale (EES; Piran et al., 2020), a 34-item self-report measure that assesses the current quality of an individual's connection to their body. The EES has six subscales: body connection and comfort (seven items, e.g., "I feel at one with my body"); body-unencumbered adjustment (six items, e.g., "I feel dissatisfied, envious, and frustrated when I compare my body to another woman" [reversed scored]); agency and functionality (six items, e.g., "I am comfortable voicing my views, opinions and beliefs"); experience and expression of sexual desire (four items, e.g., "I express what I want and need sexually"); resisting objectification (four items; e.g., "I am proud of what my body can do"); and attuned self-care (seven items, e.g., "I take good care of, and am respectful of, my body"; Piran et al., 2020). Participants rate their agreement with the items on a 5-point Likert

scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The present study utilizes the overall scale. All items are summed, with higher scores indicating more positive embodiment. Prior research indicates that scale's total score items demonstrate good estimated internal consistency (α = .93) and validity and in diverse community-based samples of adult women which included Black women (Piran et al., 2020). In the present study, Cronbach's alpha for the items that comprise the overall scale was also good (α = .95).

Disordered Eating

DE was conceptualized as the degree to which an individual experiences maladaptive cognitions and behaviors surrounding eating, food, and their body, including restrictive eating behaviors and cognitions, concern over body shape and/or weight, binge eating, and unhealthy weight control practices (i.e., self-induced vomiting, laxative use, diuretic use, exercise for weight control). The Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) was used to assess degree of engagement of DE in the past twenty-eight days. The global score was calculated from 22 of the EDE-Q's 36 total items focused on frequency of behaviors and cognitions related to dieting, eating, and appearance (e.g., "In the past 28 days, have you been deliberately trying to limit the amount of food you eat to influence your shape or weight?"). Response options range from *no days/none of the times/not at all (0)* to *every day/every time/markedly (6)*. The global score reflects an average calculation, with higher scores indicating a greater frequency of DE pathology. Five items assessed the frequency of subjective and objective binge eating. Binge eating frequency was calculated by summing total subjective and objective binge eating episodes (Kelly et al., 2012; Williamson et al., 2021). Four items assessed unhealthy weight control practices (i.e., self-induced vomiting, laxative use, diuretic use, and exercise for weight control episodes; e.g., "Have you taken laxatives as a means of controlling

your shape or weight? How many such episodes have you had?"). A count was calculated by summing the total number episodes of these practices within the prior 28 days. Prior research has found strong convergent validity and estimated internal consistency for the items that comprise the global score in clinical and non-clinical samples of racially and ethnically diverse adult women (Cronbach's α = .90; Peterson et al., 2007), including young Black women (Cronbach's α = .91; Kelly et al., 2012). Global scores on the written measure have been found to be consistent with scores obtained via standard clinical interview (Berg et al., 2012). In the present study, Cronbach's alpha for the global score items indicated excellent internal consistency (α = .95).

Positionality

I recognize that studies examining DE among Black women have predominantly been conducted by non-Hispanic White researchers, which can contribute to biases in how their experiences are heard, translated, and applied to prevention and therapeutic approaches. Therefore, it is critical to acknowledge my positionality which may influence the current study's theoretical proposal and conclusions. I am a thin-bodied, able-bodied Jewish queer female individual of Hispanic heritage. I am not a Black woman and do not have lived experience with racial discrimination. My position is inherently privileged and perpetuates White cisgender perspectives in DE research. The goal of the present study is to draw attention to the interpersonal and structural forms of oppression that contribute to DE in Black women. I have made conscious efforts at every stage (e.g., theoretical approach, grant application process) of this research to include the perspectives of Black women, including the formation of an interdisciplinary team of Black female academics, Black clinicians, and Black women with lived experience with DE. However, despite my efforts to address existing biases, my identities may impact the study's conceptualization and interpretation of the findings.

Data Analytic Plan

All analyses were conducted using RStudio Statistical Software (R Core Team, 2022). Missing data screening and descriptive statistics were conducted first. To explore the bivariate relationships between the main study variables, Pearson correlations (r) were conducted among continuous study variables (small = 0.1, medium = 0.3, large = 0.5; Cohen, 1988). Spearman's rho (ρ) correlations were conducted between continuous and count study variables (i.e., binge eating, unhealthy weight control practices).

Given the mix of continuous and count dependent variables, several regression models were conducted to test the study's hypotheses. Assumption testing was conducted prior to the hypothesis-testing primary analyses. Multiple regression models were conducted to assess the associations between the independent variables (i.e., food insecurity, traumatic events, and discrimination distress) and the continuous dependent variables (i.e., embodiment and global DE scores). The binge eating and unhealthy weight control practices constructs are count variables and require statistical models that handle these types of distributions (e.g., Poisson regression models). Descriptive statistics of binge eating and unhealthy weight control practice frequencies indicated overdispersion (binge eating $\phi = 5.15$; unhealthy weight control practices $\phi = 9.59$) and zero inflation (i.e., presence of excess zeros indicating absence of a behavior; see Table 1). Additional evidence of overdispersion is that the variances of binge eating ($\sigma^2 = 36.29$) and unhealthy weight control practices ($\sigma^2 = 55.87$) were substantially larger than their means (binge eating $M = 4.20$; unhealthy weight control practices $M = 5.77$). General negative binomial and zero-inflated negative binomial models were considered given their ability to account for overdispersion.

Bayesian information criterion (BIC) values demonstrated strong evidence that the zero-inflated negative binomial model improved model fit for binge eating and unhealthy weight control practices in comparison to standard negative binomial models ($\Delta BIC = 3, 21$; respectively; Lorah & Womack, 2019; Raftery, 1995). As such, two zero-inflated negative binomial regression models were conducted to assess the associations for food insecurity, traumatic events, discrimination distress, and embodiment (independent variables) with the frequency of binge eating episodes and unhealthy weight control practices (dependent variables). Zero-inflated negative binomial models include a random component that accounts for overdispersion (Elhai et al., 2008; Payne et al., 2018). Additionally, zero-inflated negative binomial models allow for the examination of how particular variables may relate to DE with respect to (a) the likelihood of behavioral occurrence and (b) the frequency of behavioral engagement (Schaumberg et al., 2018). Consequently, zero-inflated negative binomial models result in two analyses: (a) a logistic regression model with binge eating and unhealthy weight control practices coded dichotomously, representing the behavior likelihood; and (b) a count regression model delineating linear frequency among those in the subsample who are likely to engage in the behavior. For the logistic regression model, odd ratios (OR) are reported to indicate the likelihood of behavior absence according to a one-unit change in the independent variable. For the count regression model, exponentiated regression coefficients are reported as incidence-rate ratios (IRR), whereby values above one indicate an increased incidence rate in binge eating and unhealthy weight control practice frequency and values below one reflect a decreased incidence rate (Hilbe, 2011).

To test Hypothesis 1 (H1), that food insecurity, traumatic events, and discrimination distress would be collectively associated with embodiment, a single multiple regression model

was conducted. In this model, the independent variables food insecurity, traumatic events, and discrimination distress were included together in step one and embodiment was included as the dependent variable.

To test Hypothesis 2 (H2), that food insecurity, traumatic events, and discrimination distress would be collectively associated with global DE scores, binge eating, and unhealthy weight control practices, a second multiple regression model and two zero-inflated negative binomial models were conducted. In the multiple regression model, the independent variables food insecurity, traumatic events, and discrimination distress were included together in step one and global DE was identified as the dependent variable. In the two zero-inflated negative binomial regression models, the same independent variables were included, while binge eating and unhealthy weight control practices were included as separate dependent variables in their own models.

To test Hypothesis 3 (H3), that embodiment would be significantly and negatively associated with global DE, binge eating, and unhealthy weight control practices after adjusting for food insecurity, traumatic events, and discrimination distress, one sequential forward entry multiple regression model and two zero-inflated negative binomial regressions models were conducted. The sequential forward entry multiple regression model was conducted with food insecurity, discrimination distress, and traumatic events entered together in step one and embodiment in step two (independent variables), with global DE scores as the dependent variable. In the zero inflated negative binomial regression models, food insecurity, traumatic events, discrimination distress, and embodiment were included as independent variables, while binge eating and unhealthy weight control practices were identified as separate dependent variables in their own models.

Effect sizes for the overall multiple regression models were calculated as R^2 (small = 0.02, medium = 0.13, large = 0.26; Cohen, 1988) with 95% confidence intervals. For the sequential multiple regression model, effect size for the contributions of an additional level (i.e., the contribution of embodiment) is also indicated by f^2 (small = .02; medium = .15; large = .35; Cohen, 1988) with difference in variance explained calculated as ΔR^2. Analyses were reported with unstandardized regression coefficients (B) and the unique variance explained by each independent variable was calculated as the semi-partial correlation squared (sr^2).

Effect sizes for model comparisons of the zero-inflated negative binomial models were assessed by difference in BIC values (ΔBIC) and computation of Bayes factors (BF). In comparison to other measures of information criterion, BIC provides an increasingly larger penalty per parameter and thus tends to favor more parsimonious models. A greater difference in BIC values indicates support for the model with the smaller BIC, such that a difference between zero and two constitutes 'weak' evidence, a difference between two and six constitutes 'positive' evidence; a difference between six and 10 constitutes 'strong' evidence; and a difference greater than 10 constitutes 'very strong' evidence (Bauldry, 2015; Boykin et al., 2023). The BF is the ratio of the marginal likelihoods and is reported as the deviation from one, such that the larger BF indicates greater support for the alternative model (small = 1-3; moderate = 3-10, strong = greater than 10; (Kass & Raftery, 1995; Kruschke, 2021; van Doorn et al., 2021). Pseudo-R^2 for each model was calculated as the fraction of the deviance explained, such that larger values indicate reduced deviance (Martin & Hall, 2016).

Annual income and body mass index (BMI) were considered as covariates given their previously documented significant associations with DE (Harrop et al., 2021; Lipson & Sonneville, 2017; Reagan & Hersch, 2005). However, in the last decade, scholars, clinicians, and

advocates have questioned the utility and reliability of BMI and its associations with physical and psychological health outcomes (Ahima & Lazar, 2013; Humphreys, 2010; Tomiyama, 2014). Recent studies demonstrate that weight stigmatization, referring to the societal devaluation of and discrimination towards individuals based on their weight, consistently underlies the relationship between body size and health, including DE, such that adjusting for weight stigma often attenuates or removes the significance of this association (Campos et al., 2006; Carbone et al., 2019; Fontaine et al., 2003; Lee et al., 2021; Osa et al., 2021; Romano et al., 2021; Tomiyama, 2014). It is also important to recognize that BMI was developed in non-Hispanic White European communities, does not consider important variations by race or ethnicity, and frequently has clouded the systemic issues which negatively impact the health of Black women (e.g., discrimination; Strings, 2019; W. Trotter, personal communication, March 10, 2023). Consultation with Black clinical, community, and academic partners revealed a preference for excluding BMI from the primary analyses. Specifically, Black community members with lived expertise were apprehensive about including BMI due to instances in which medical professionals had encouraged their DE behaviors and recommended weight loss due to their higher weight status. Black clinicians shared these concerns, noting that inclusion of BMI in the primary analyses reinforces the misguided premise that body size is an essential component of assessing DE, and would perpetuate the historical focus on BMI instead of contribute to a necessary paradigm shift towards understanding DE as an outcome of racial oppression and marginalization. All analyses were considered significant at $p < .05$.

Post-hoc Power Analysis

A post-hoc power analysis conducted in G*Power (Faul et al., 2009) indicated that at the power convention of 0.80 with a two-sided α of .05 and an f^2 of 0.15 (medium effect; Cohen,

1988), a sample size of 99 is adequate to detect the effect size found in prior research examining the association between race-related stress and DE psychopathology with two covariates (Salami et al., 2019).

CHAPTER III

RESULTS

Preliminary Analyses

Participants

At the time of analyses, 122 individuals attempted to complete the survey. Ten individuals did not meet the eligibility criteria (e.g., were over the age of 40). Accordingly, 112 eligible participants completed the survey. Four participants were removed because they did not complete the main study measures. Four participants were removed because they reported what is considered to be an unlikely height and weight (i.e., resulting in a BMI of less than 14 or greater than 45, values which are well beyond the range typically reported in national and global averages; Stevens et al., 2012). Mapping of Cook's distance threshold values revealed five observations were considered influential outliers for embodiment and global DE scores (Cook, 1977). Thus, sensitivity analyses using difference in BIC values (ΔBIC) were conducted to evaluate the impact of these outliers on the overall model fit for the multiple regression models, whereby an increase in BIC suggests reduction of overall model fit (Bauldry, 2015; Boykin et al., 2023). Results of these analyses indicated that inclusion of the influential outliers substantially reduced overall fit of the multiple regression models (embodiment ΔBIC = 45.66; global DE scores ΔBIC = 36.51). Removal of outliers, rather than data transformation, is a considerable approach in instances in which the observations decrease overall model fit with small sample sizes given that the presence of outliers cannot be confirmed as random (as opposed to error or ingenuine responses), and therefore jeopardize the robustness of the findings (Leys et al., 2019). Without the ability to clearly differentiate random and error outliers, these observations were excluded prior to the primary analyses (Cohen et al., 2003). Including removed outliers, the

amount of missing data was minimal (i.e., < 5 %). Given the small sample size, multiple imputation was utilized due to its ability to provide accurate estimates of means, associations, and variables of interest with low risk of false precision (Li et al., 2015). The final analytic sample comprised 99 participants (M_{age} = 27.77 ± 5.17 years; see Table 1 for details). Participants predominantly identified as African American (66%), cisgender (99%), and heterosexual (70%). Most participants also had a 4-year college or graduate degree (74.7%) and lived in the Southern part of the U.S. (38%). Notably, 15 participants (15.5%) scored a four or above on the global DE measure, indicating the potential presence of a threshold eating disorder (Mond et al., 2006).

Data Screening

Histograms of the independent variables were approximately normally distributed with the exception of food insecurity, which was positively skewed and revealed that most participants did not experience any food insecurity in the past 12 months. Therefore, food insecurity was dichotomized between "no food insecurity" (coded as 0, 61%) and "any food insecurity" (coded as 1, 39%). For the multiple regression models, examination of the histograms of studentized residuals, the normal Q-Q plots, skewness, and kurtosis values suggested the residuals were approximately normally distributed. Visual inspection of scatterplots among the study variables suggested linear relationships between the continuous independent and dependent variables. A scatterplot of studentized residuals indicated there were no violations of heteroscedasticity. VIF values were within acceptable limits (< 5; James et al., 2013), indicating multicollinearity was not a concern for the primary analyses. There were significant small, moderate, and large bivariate correlations among the main study variables (rs = |.20 - .74|). Table

2 presents the descriptive statistics among the main study variables. Table 3 presents the correlations among the main study variables.

Table 1. Demographic Characteristics of the Study Sample ($N = 99$)

Characteristic		*n*(%)
Racial identity		
	African American	66(66.7%)
	Black	21(21.2%)
	African American and Black	4(4%)
	African American and Indigenous or Alaska native	1(1%)
	African American and Hispanic or Latino/a/x	1(1%)
	African American and White/European	2(2%)
	Multiracial	4(4%)
Gender identity		
	Cisgender	98(99%)
	Transgender	1(1%)
Annual income		
	Less than $10,000	5(5.1%)
	$10,000-$19,000	4(4%)
	$20,000-$29,000	9(9.1%)
	$30,000-$39,000	10(10.1%)
	$40,000-$49,000	7(7.1%)
	$50,000-$59,000	11(11.1%)
	$60,000-$69,000	7(7.1%)
	$70,000-$79,000	17(17.2%)
	$80,000-$89,000	7(7.1%)
	$90,000-$99,000	2(2%)
	$100,000 or more	19(19.2%)
Sexual orientation		
	Asexual	4(4%)
	Bisexual	12(12.1%)
	Gay	1(1%)
	Heterosexual	70(70.7%)
	Lesbian	4(4%)
	Other	8(8.1%)
Relationship status		
	Married or in a relationship	52(52.5%)
	Single	46(46.5%)
	Divorced	1(1%)

Table 1 (continued). Demographic Characteristics of the Study Sample ($N = 99$)

Characteristic		*n*(%)
Highest educational level		
	High school or GED	8(8.1%)
	2-year college	8(8.1%)
	Currently undergraduate student	8(8.1%)
	4-year college or university	45(45.5%)
	Professional or graduate school	28(28.3%)
	Trade or technical school	2(2%)
Employment status		
	Student or graduate student	24(24.2%)
	Unemployed and looking for work	4(4%)
	Employed part-time	18(18.2%)
	Employed full time	50(50.5%)
	Stay at home parent	3(3%)
Geographic region		
	West	22(22.2%)
	Central	7(7.1%)
	Midwest	9(9.1%)
	South	37(37.4%)
	East	24(24.2%)
First generation immigrant[a]		
	Yes	10(10%)
	No	88(88.9%)
Religiosity		
	Religious	31(31.3%)
	Spiritual	43(43.4%)
	Neither religious nor spiritual	25(25.3%)
Objective or subjective binge eating episode in past 28 days		
	Yes	63(63.6%)
	No	36(36.4%)
At least one unhealthy weight control practice in the past 28 days[b]	Yes	51(51.5%)
	No	48(48.5%)
Body mass index[c]		
	< 18.5	7(7.1%)
	18.6-24.9	37(37.4%)
	25.0-29.9	20(20.2%)
	> 30.0	34(34.3%)

[a]One (1%) participant did not report immigration status.
[b]Calculated by including self-induced vomiting, laxative use, diuretic use, and exercise for weight control.
[c] Categories calculated according to guidelines provided by the Centers for Disease Control (CDC).

Table 2. Descriptive Statistics for Main Study Variables

Variable	*M* ± SD	Min	Max	Median	Mode
1. Food insecurity[a]	1.27 ± 1.96	0	7	0	0
2. Discrimination distress	2.29 ± 0.69	1	4	2	3
3. Traumatic events	5.19 ± 3.87	0	15	4	2
4. Disordered eating[b]	2.42 ± 1.54	0	6	2.67	3
5. Embodiment	120 ± 28.1	54	165	126	106
6. Binge eating[c]	4.20 ± 6.02	0	38	2	0
7. Unhealthy weight control practices[d]	5.77 ± 7.73	0	34	2	0

Note. N=99.
[a] Calculated with continuous variable.
[b] Calculated from global disordered eating scores as measured by the Eating Disorder Examination Questionnaire.
[c] Calculated from sum of subjective and objective binge eating episodes.
[d] Calculated from sum of self-induced vomiting, laxative use, diuretic use, and exercise for weight control.

Table 3. Zero-order Correlations of Main Study Variables

Variable	1	2	3	4	5	6
1. Food insecurity[a]	-					
2. Discrimination distress	.24*	-				
3. Traumatic events	.42***	.52***	-			
4. Disordered eating[b]	.04	.35**	.47***	-		
5. Embodiment	-.22*	-.30**	-.38***	-.76***	-	
6. Binge eating[c]	.03	.25*	.40***	.56***	-.52***	-
7. Unhealthy weight control practices[d]	.05	.21*	.22*	.49***	-.21*	.27**

Note. N=99. Continuous variable correlations assessed with Pearson's *r*. Correlations of binge eating and unhealthy weight control practices assessed with Spearman's ρ.
[a] Calculated with binary variable. No food insecurity coded as 0; any food insecurity coded as 1.
[b] Correlations represent global disordered eating scores as measured by the Eating Disorder Examination Questionnaire.
[c] Variable calculated from sum of subjective and objective binge eating episodes.
[d] Variable calculated from sum of self-induced vomiting, laxative use, diuretic use, and exercise for weight control.
* Significant at $p < .05$; ** Significant at $p < .01$; *** Significant at $p < .001$.

Covariate Evaluation

In unadjusted models, annual income was not significantly associated with embodiment ($p = .261$), global DE ($p = .620$), binge eating ($p = .388$), or unhealthy weight control practices (p

= .991), and was therefore not included in hypothesis-testing models. BMI was not significantly associated with embodiment (p = .302), unhealthy weight control practices (p = .153), or binge eating (p = .281), but was significantly and positively associated with global DE scores (p = .030). Therefore, a sensitivity analysis was conducted to investigate the influence of BMI in the primary analyses. Inclusion of BMI did not affect the significance or the direction of the findings. Thus, in response to concerns raised by Black community and clinical partners, BMI was not included as a covariate in the models.

Primary Analyses

H1: Social Disempowerment and Disconnection and Embodiment

The overall model including food insecurity, traumatic events, and discrimination distress was significant, $F(3,95) = 6.76$, $R^2 = .17$, 95% CI[.04, .29], $p < .001$ (see Table 4). Within the model, a higher frequency of traumatic events was significantly and negatively associated with embodiment, $B = -2.26$, $t(95) = -2.63$, $p = .008$, $sr^2 = .06$ (see Figure 2); this association uniquely explained 6% of the variance in embodiment. Neither food insecurity (p = .581) nor discrimination distress (p = .253) were uniquely significantly associated with embodiment.

Table 4. Associations for Food Insecurity, Traumatic Events, and Discrimination Distress with Embodiment

	Embodiment			
	B	*B* 95% CI	sr^2	R^2
Independent Variable				.17***
Food insecurity[a]	-3.23	[-14.79, 8.33]	.01	
Traumatic events	-2.23**	[-3.90, -0.55]	.06	
Discrimination distress	-4.98	[-13.57, 3.62]	.02	

Note. $N = 99$. B = Unstandardized regression coefficients.
CI = Confidence interval. sr^2 = Semi-partial correlation squared.
[a]Entered as dichotomous variable. No food insecurity coded as 0; any food insecurity coded as 1.
** Significant at $p < .01$; *** Significant at $p < .001$.

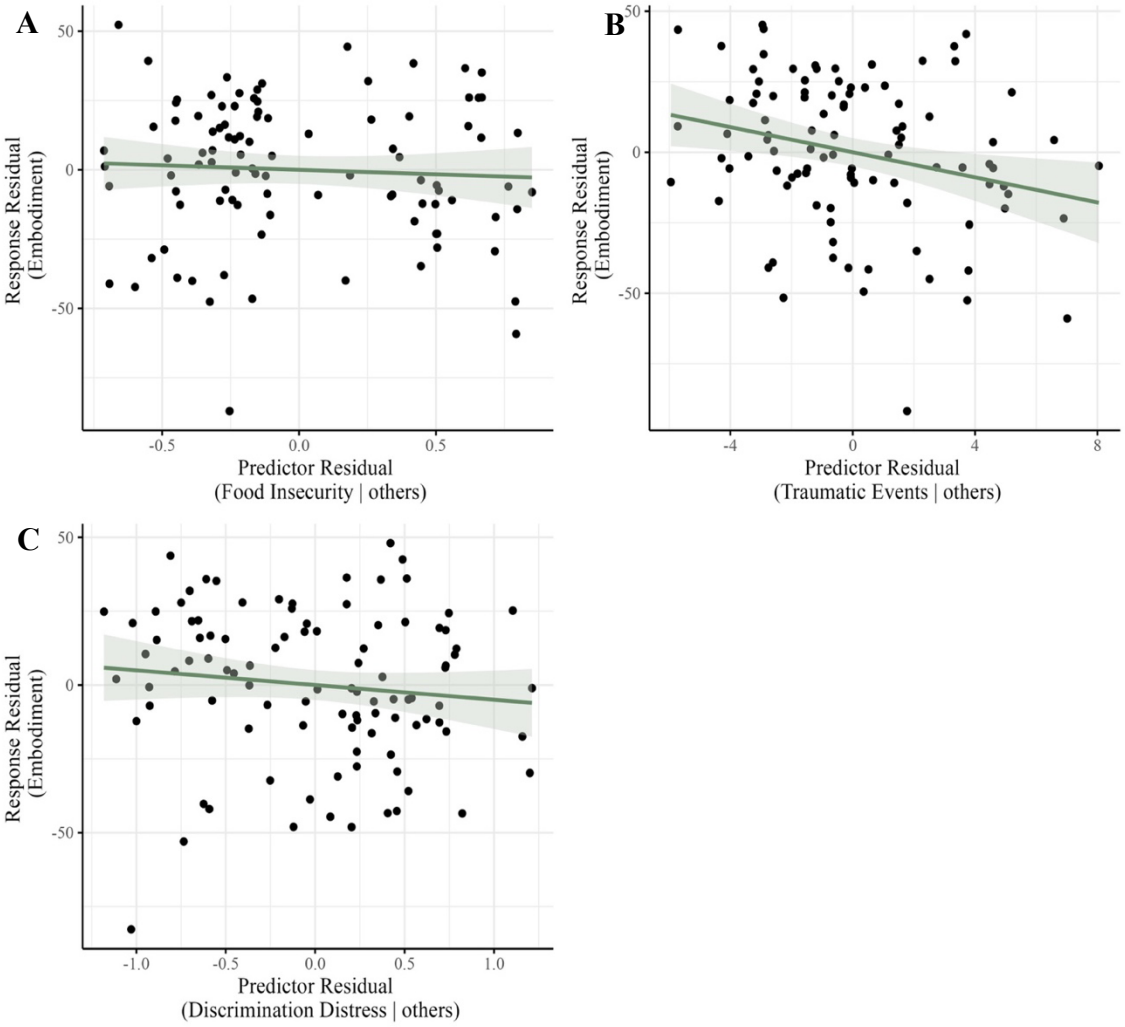

Figure 2. In the multiple regression model, traumatic events (B) was uniquely significantly associated with embodiment (sr^2 = .06; p = .008). Neither food insecurity (A) nor discrimination distress (C) were uniquely significantly associated with embodiment.

H2: Social Disempowerment and Disconnection and Disordered Eating

Global Disordered Eating. The overall model including food insecurity, traumatic events, and discrimination stress was significant, $F(4,95) = 11.95$, $R^2 = .27$, 95% CI[.12, .39], $p < .001$ (see Table 5). In the model, a higher frequency of traumatic events was significantly and positively associated with global DE scores, $B = 0.19$, $t(95) = 4.43$, $p < .001$, $sr^2 = .15$ (see Figure 3); this association uniquely explained 15% of the variance in global DE scores. Food insecurity was significantly and negatively associated with global DE scores, $B = -0.64$, $t(93) = -2.15$, $p = .034$, $sr^2 = .04$, indicating that DE pathology was lower among those who experienced any food insecurity in the prior year relative to those who did not; this association uniquely explained 4% of the variance in global DE scores. Discrimination distress was not uniquely significantly associated with global DE scores ($p = .153$).

Table 5. Associations for Food Insecurity, Traumatic Events, and Discrimination Distress with Global Disordered Eating Scores

	Global disordered eating			
	B	*B* 95% CI	sr^2	R^2
Independent Variable				.27***
Food insecurity[a]	-0.64*	[-0.40, -0.02]	.04	
Traumatic events	0.19***	[0.27, 0.70]	.15	
Discrimination distress	0.32	[-0.06, 0.35]	.02	

Note. $N = 99$. *B* = Unstandardized regression coefficients.
CI = Confidence interval. sr^2 = Semi-partial correlation squared.
[a]Entered as dichotomous variable. No food insecurity coded as 0; any food insecurity coded as 1.
* Significant at $p < .05$; ** Significant at $p < .01$; *** Significant at $p < .001$.

Binge Eating. There was weak evidence to support the model for binge eating with food insecurity, traumatic events, and discrimination distress in comparison to the null intercept only model, ΔBIC = 1.01; BF = 1.63, Pseudo-$R^2 = .32$ (see Table 6). In the model, a greater frequency of traumatic events was significantly associated with an increased likelihood of engaging in

binge eating, OR = 1.62, 95% CI [0.08, 0.87], p = .019. Among those who reported any binge eating within the last 28 days, traumatic events was not significantly associated with the frequency of binge eating (p = .170). Neither food insecurity (ps = .303, .061) nor discrimination distress (ps = .137, .620) were significantly associated with the likelihood or frequency of binge eating, respectively.

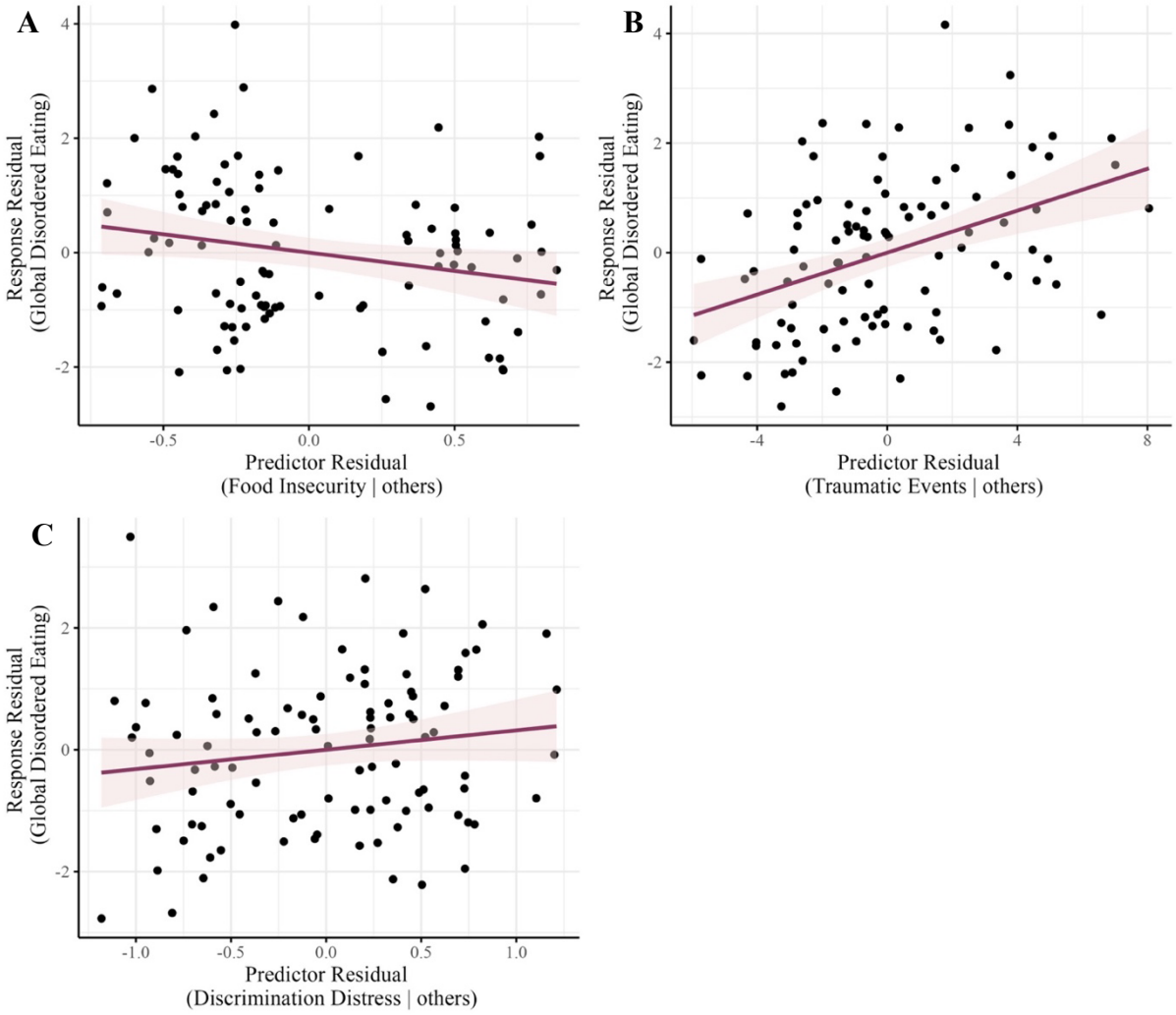

Figure 3. In the multiple regression model, food insecurity (A) was uniquely significantly associated with global disordered eating scores (sr^2 = .04; p = .034). Traumatic events (B) was uniquely significantly associated with global disordered eating scores (sr^2 = .15; p < .001). Discrimination distress (C) was not uniquely significantly associated with global disordered eating scores.

Table 6. Sequential Associations for Food Insecurity, Traumatic Events, Discrimination Distress, and Embodiment with Global Disordered Eating Scores

		Global disordered eating					
		B	*B* 95% CI	sr^2	R^2	ΔR^2	f^2
Block 1					.17***	.17	
	Food insecurity[a]	-0.76**	[-1.17, -0.35]	.01			
	Traumatic events	0.11**	[0.05, 0.17]	.06			
	Discrimination distress	0.13	[-0.17, 0.44]	.02			
Block 2					.66***	0.39	1.14
	Embodiment	-0.04**	[-0.04, -0.03]	.39			

Note. $N = 99$. *B* = Unstandardized regression coefficients.
CI = Confidence interval. sr^2 = Semi-partial correlation squared.
[a]Entered as dichotomous variable. No food insecurity coded as 0; any food insecurity coded as 1.
** Significant at $p < .01$; *** Significant at $p < .001$.

Unhealthy Weight Control Practices. According to model fit indices, effect sizes indicated there was very strong evidence to support the model with food insecurity, traumatic events, and discrimination distress in comparison to the null intercept only model, ΔBIC = 19.18; BF = 146 x 10^4, Pseudo-R^2 = .55 (see Table 7). However, in the model, neither food insecurity (*p*s = .829, .462), traumatic events (*p*s = .101, .642), nor discrimination distress (*p*s = .503, .205) were significantly associated with the likelihood or frequency of unhealthy weight control practices, respectively.

Table 7. Results of Zero-inflated Negative Binomial Models for Food Insecurity, Traumatic Events, and Discrimination Distress with Binge Eating

	Binge eating[b]						
	Zero		Count				
	B	*SE*	*B*	*SE*	BIC	BF	Pseudo-R^2
					496.59	1.63	.32
Food insecurity[a]	1.03	1.01	-0.53	0.28			
Traumatic events	-0.47*	0.20	0.05	0.04			
Discrimination distress	-1.15	0.78	-0.10	0.21			

Note. $N = 99$. *B* = Unstandardized regression coefficients. *SE* = Standard errors. BIC = Bayes Information Criterion. BF = Bayes factor compared to null model. Pseudo-R^2 = Proportion of deviance explained.
[a] Entered as dichotomous variable. No food insecurity coded as 0; any food insecurity coded as 1.
[b] Sum of objective and subjective binge eating episodes.
* $p < .05$.

H3: Social Disempowerment and Disconnection, Embodiment, and Disordered Eating

Global Disordered Eating. After adjusting for food insecurity, traumatic events, and discrimination distress, embodiment was significantly and negatively associated with global DE scores, B = -0.04, $t(95)$ = -10.340, $p < .001$, $sr^2 = .39$; this association uniquely explained 39% of the variance in global DE scores (see Table 8; see Figure 4). The addition of embodiment to the model significantly increased the overall proportion of variance explained in global DE scores, $F(4,95) = 45.68$, $R^2 = .66$, 95% CI[.53, .72], $\Delta R^2 = .39$, $f^2 = 1.14$.

Table 8. Results of Zero-inflated Negative Binomial Models for Food Insecurity, Traumatic Events, Discrimination Distress, and Embodiment with Binge Eating

	Binge eating[b]						
	Zero		Count				
	B	*SE*	*B*	*SE*	BIC	BF	Pseudo-R^2
					487.28	105.22	.43
Food insecurity[a]	1.44	1.17	-0.49	0.27			
Traumatic events	-0.47	0.25	0.03	0.04			
Discrimination distress	-1.15	1.00	-0.11	0.20			
Embodiment	0.04*	0.02	-0.01**	0.01			

Note. N = 99. B = Unstandardized regression coefficients. *SE* = Standard errors. BIC = Bayes Information Criterion. BF = Bayes factor compared to model without embodiment. Pseudo-R^2 = Proportion of deviance explained.
[a] Entered as dichotomous variable. No food insecurity coded as 0; any food insecurity coded as 1.
[b] Sum of objective and subjective binge eating episodes.
* $p < .05$. ** $p < .01$.

Binge Eating. According to model fit indices, effect sizes indicated there was strong evidence to support the addition of embodiment to the model with food insecurity, traumatic events, and discrimination distress, ΔBIC = 9.31; BF = 105.22, Pseudo-R^2 = .43 (see Table 9). After adjusting for food insecurity, traumatic events, and discrimination distress, lower embodiment was significantly associated with an increased likelihood of engaging in binge eating, OR = 1.05, 95% CI [0.01, 0.08], p = .01. Within those who reported any binge eating within the last 28 days, higher embodiment was significantly associated with a decreased frequency of binge eating, Exp(B) = 0.98, 95% CI [-0.02, -0.003], p = .009.

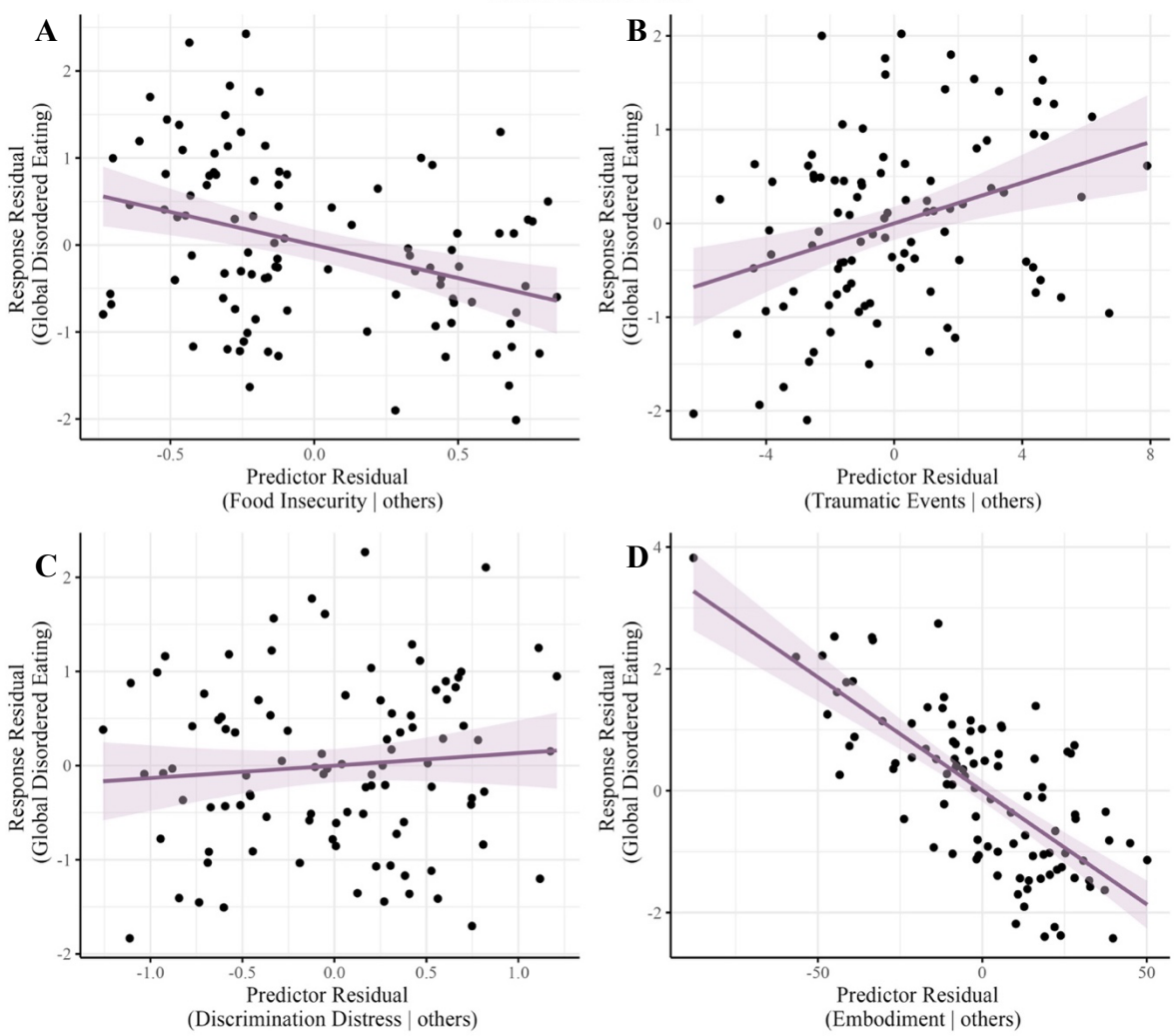

Figure 4. In the multiple regression model, embodiment (D) was significantly associated with global disordered eating scores after adjusting for food insecurity, traumatic events, and discrimination distress ($sr^2 = .39$, $p < .001$).

Table 9. Results of Zero-inflated Negative Binomial Models for Food Insecurity, Traumatic Events, and Discrimination Distress with Unhealthy Weight Control Practices

	Unhealthy weight control practices[b]						
	Zero		Count				
	B	*SE*	*B*	*SE*	BIC	BF	Pseudo-R^2
					506.30	1.46 x 10^4	.55
Food insecurity[a]	0.10	0.48	-0.16	0.22			
Traumatic events	-0.12	0.07	-0.01	0.03			
Discrimination distress	-0.24	0.35	0.21	0.17			

Note. $N = 99$. *B* = Unstandardized regression coefficients. *SE* = Standard errors. BIC = Bayes Information Criterion. BF = Bayes factor compared to null model.
Pseudo-R^2 = Proportion of deviance explained.
[a] Entered as dichotomous variable. No food insecurity coded as 0; any food insecurity coded as 1.
[b] Sum of self-induced vomiting, laxative use, diuretic use, and exercise for weight control.

Unhealthy Weight Control Practices. According to model fit indices, effect sizes indicated there was positive evidence to support the addition of embodiment to the model with food insecurity, traumatic events, and discrimination distress, ΔBIC = 3.37; BF = 3.72, Pseudo-R^2 = .57 (see Table 10). After adjusting for food insecurity, traumatic events, and discrimination distress, lower embodiment was significantly associated with an increased likelihood of engaging in unhealthy weight control practices, OR = 1.03, 95% CI [0.002, 0.037], $p = .03$. Among those who reported any unhealthy weight control practices within the last 28 days, embodiment was not significantly associated with the frequency of unhealthy weight control practices ($p = .231$).

Table 10. Results of Zero-inflated Negative Binomial Models for Food Insecurity, Traumatic Events, Discrimination Distress, and Embodiment with Unhealthy Weight Control Practices

	Unhealthy weight control practices[b]						
	Zero		Count				
	B	*SE*	*B*	*SE*	BIC	BF	Pseudo-R^2
					503.67	3.72	.57
Food insecurity[a]	0.20	0.49	-0.09	0.22			
Traumatic events	-0.08	0.07	-0.01	0.03			
Discrimination distress	-0.17	0.36	0.18	0.16			
Embodiment	0.02*	0.01	0.01	0.01			

Note. $N = 99$. *B* = Unstandardized regression coefficients. *SE* = Standard errors. BIC = Bayes Information Criterion. BF = Bayes factor compared to model without embodiment. Pseudo-R^2 = Proportion of deviance explained.
[a] Entered as dichotomous variable. No food insecurity coded as 0; any food insecurity coded as 1.
[b] Sum of self-induced vomiting, laxative use, diuretic use, and exercise for weight control.
* $p < .05$.

CHAPTER IV

DISCUSSION

Historically, the dominant narrative of DE has emphasized thinness and Whiteness and has failed to recognize that disempowering realities of oppression that impact Black women's bodily comfort and eating patterns. The primary aim of the current study was to investigate the preliminary associations among factors exemplifying social disempowerment and disconnection (i.e., food insecurity, traumatic events, discrimination distress), embodiment, and DE among Black women 18 to 40 years old living in the U.S. Overall, results from the current study are in line with the DTE and with a multi-level model of associations central to public health frameworks, whereby social systems and experiences, such as those related to racial oppression, shape an individual's relationship with their body and food (Alegría et al., 2019; Piran et al., 2023).

Social Disempowerment and Disconnection and Embodiment

Consistent with the first hypothesis, food insecurity, traumatic events, and discrimination distress were collectively significantly associated with embodiment. This finding converges with the theoretical conceptualization of embodiment, whereby body connection and care is influenced by one's social identities, adverse social experiences, and surrounding environmental conditions (Piran, 2017). Given that positive embodiment depends on access to resources, empowering relationships, and membership in equitable communities, this association lends further evidence that, for some Black women, factors evident of social disempowerment and disconnection may infiltrate the subjective experience of one's body (Beauboeuf-Lafontant, 2003, Piran, 2017).

Importantly, squared semi-partial correlations indicate that exposure to traumatic events is most closely connected to embodiment as it was the only statistically significant individual variable in the full model. The significance of trauma to embodiment is consistent with Piran's (2017) qualitative research program, whereby physical and emotional safety is identified as the foundation for the development of agency, self-care, and self-worth. Extensive qualitative data make it abundantly clear that trauma, particularly events that entail bodily violation (e.g., rape, physical abuse), disrupt all aspects of embodiment by converting bodily connection and comfort into dissociation and shame (Piran, 2017). In these interviews, women belonging to marginalized racial and ethnic groups expressed that the profound influence of trauma on embodiment is compounded by oppression, such that many of these harrowing events, such as racially motivated violence, serve to reinforce inequity and social disempowerment (Piran, 2017). Yet, neither food insecurity nor discrimination distress, two examples of racial oppression, were uniquely significantly associated with embodiment in this sample.

These unexpected findings could be due to shared variance among food insecurity, traumatic events, and discrimination distress. The observed significant moderate bivariate correlations with one another may reflect that these expressions of social disempowerment and disconnection underlie a common feature of Black women's embodiment. For example, food insecurity, traumatic events, and discrimination distress all compromise feelings of safety, either indirectly (e.g., unreliable access to resources) or directly (e.g., bodily threat), and these experiences have been implicated as essential to positive embodiment (Becker et al., 2017; Black et al., 2015; Horowitz, 2015; Piran, 2017). This pattern of findings supports the long-term plan of evaluating social disempowerment and disconnection as a latent construct in an effort to clarify

the varying extent to which these aspects of interpersonal and systemic oppression are relevant to embodiment.

Social Disempowerment and Disconnection and Disordered Eating

Mixed support was revealed for the hypotheses regarding social disempowerment and disconnection and DE. The multiple regression model with food insecurity, traumatic events, and discrimination distress explained significant variance in global DE scores. Likewise, the negative binomial models with food insecurity, traumatic events, and discrimination distress with binge eating and unhealthy weight control practices demonstrated improved model fit compared to the intercept-only models. This pattern of findings is broadly consistent with the growing literature linking diverse examples of racial oppression with DE among Black women (Beauboeuf-Lafontant, 2003; Longmire-Avital & McQueen, 2019; Salami et al., 2019). Although food insecurity, traumatic events, and discrimination distress have each been studied in isolation, this is the first empirical study to examine these factors together as simultaneous interpersonal and systemic oppressive forces related to Black women's DE. Previous qualitative data support the entanglement of social disempowerment and Black women's DE, with many Black women citing restriction, binge eating, and unhealthy weight control practices as emerging from oppressive experiences, including interpersonal violence, racial discrimination, and unstable access to nutritious food (Assari, 2018; Harrington et al., 2010; Piran, 2017; Thompson, 1994). Yet, compared to appearance-related constructs, the role of racial oppression in DE receives limited attention in research. It stands to reason that the mutual influence of systemic and interpersonal racial oppression possesses meaningful relevance to some Black women's DE and warrants additional scientific exploration. However, in terms of the unique contributions of each independent variable, exposure to traumatic events was significantly positively associated with

global DE scores and likelihood of binge eating, but not unhealthy weight control practices; food insecurity was significantly negatively associated with global DE pathology; and discrimination distress was not significantly related to any DE constructs.

The observed links between traumatic events and these forms of DE is consistent with cross-sectional and longitudinal data (Harrington et al., 2010; Kong & Bernstein, 2009; Madowitz et al., 2015; Malecki et al., 2018), and is particularly important given Black girls and women experience trauma at astonishingly high rates compared to women of other racial and ethnic groups (Gluck et al., 2021). Numerous mechanisms have been theorized for this association. One possibility is through embodiment, such that a traumatic event may disrupt embodiment through a perceived loss of agency and bodily connection. In turn, DE may stem from an attempt to reestablish body ownership, such as through controlling one's intake in an effort to make the body appear different than the site of the trauma, such as through weight gain (Thompson, 1994; Piran, 2017). Alternatively, affect regulation has been identified as a relevant pathway connecting trauma and DE, particularly binge eating (Harrington et al., 2006; Prefit et al., 2019). Binge eating is proposed to act as a mechanism by which an individual can self-soothe or escape anxiety and sadness following a traumatic experience (Heatherton & Baumeister, 1991). However, similar to appearance-related theories of DE (Stice, 1998; Thompson & Stice, 2001), affect regulation models of binge eating have predominantly been tested among non-Hispanic white women (Harrington et al., 2010; Heatherton & Baumeister, 1991); thus, its validity for functioning as a coping strategy in response to traumatic events among Black women is currently unknown.

In contrast to the significant association between traumatic events and global DE and binge eating, the non-significant independent link between discrimination distress and all

measures of DE was unexpected in light of extant qualitative (Piran, 2017; Thompson, 1994) and quantitative research (Assari, 2018; Gilbert, 2006; Harrington et al., 2006; Mason et al., 2021b; Williams et al., 2018). The specific measure used in this study, which focuses on emotional distress and traumatization from discrimination, is an important consideration when interpreting these findings. This measure correlated strongly with the measure of traumatic events, suggesting that discrimination distress may constitute a traumatic event which would contribute to a lack of statistical independence. This result aligns with emerging conceptualizations of Black racial trauma, which emphasize that the negative psychological consequences of trauma (e.g., hyperarousal, negative affect) are also produced by the saturation of White supremacy in the U.S. The societal value placed on White bodies and cultural practices, which is frequently reinforced in popular media, historical experiences of enslavement, and in daily living, may be traumatizing to Black women by having to witness their own systemic and interpersonal marginalization (Tyler et al., 2022). Future research should expand beyond methods used in the current study to explore how racial and intergenerational trauma, in addition to other traumatic events, is associated with DE. It may also be beneficial to measure intersecting discriminatory experiences such as weight stigmatization and sexism, which have been reported by clinicians to have traumatizing impacts on Black clients with DE (Small & Fuller, 2021). These methodological modifications will clarify the unique associations of traumatic events and varying forms of discrimination with DE.

Alternatively, the non-significant link between discrimination and DE may reflect Black women's reluctance to report distress from racial discrimination in accordance with the "Strong Black Woman" (SBW) archetype, which depicts Black women as inherently resilient, self-reliant, and devoid of weakness or vulnerability (Harrington et al., 2010). Recent research

demonstrates that internalization of the SBW archetype contributes to Black women's self-silencing (Abrams et al., 2019) and the pressure to adopt and maintain this ideal is exacerbated by derogatory stereotypes which portray Black women as over-bearing and hostile (Ashley, 2014). This phenomenon is tentatively supported by examining the means and standard deviations of discrimination distress in this sample in comparison to those in previous studies. For example, average discrimination distress in this sample was slightly lower (M = 2.29) compared to mixed-gender samples of Black young adults in prior research (M = 2.49), as well as demonstrated slightly lower variability (SD = .69 in this sample compared to SD = .86; Maxie-Moreman & Tynes, 2022). Consequently, underreporting due to internalization of the SBW archetype may have undermined the strength of the associations for discrimination distress with embodiment and DE (Liao et al., 2020; Sechidis et al., 2017). To address this issue, future research with samples of Black female-identifying individuals may benefit from including measures that assess endorsement of characteristics attached to the SBW archetype (e.g., The African American Women's Shifting Scale; Johnson et al., 2016) to determine if and to what extent this ideal is influencing the links between discrimination distress, embodiment, and DE.

Interestingly, food insecurity was only significantly related to global DE scores, and this association was negative, such that those with any food insecurity reported less DE. This result is inconsistent with hypotheses and prior research demonstrating that greater food insecurity is associated with more DE across racial and ethnic groups in the U.S. (Hazzard et al., 2020; Middlemass et al., 2020). One explanation is that the measure used in the current study assessed specific behaviors related to food insecurity (e.g., skipping meals to extend food resources) in the past year. Although previous research emphasizes that food insecure behaviors emerge during times of financial strain, it may be that Black women in this sample are engaging in some of

these same behaviors in anticipation of future periods of food inaccessibility (Barrett, 2010). Given that food restriction, even if involuntary, is associated with body preoccupation and escalation of restrictive eating patterns, these anticipatory behaviors may precipitate DE during times of food security (Barrett, 2010; Becker et al., 2017; Hazzard et al., 2020; Middlemass et al., 2020).

However, it is important to note that, consistent with prior literature and expectations, the bivariate correlation between food insecurity and global DE was significant and positive. These contrasting findings across model may reflect a negative suppression effect. In negative suppression, the partial regression coefficient of the independent variable with the smaller association with the dependent variable (i.e. food insecurity) reverses direction in the presence of the independent variable with the stronger association with the dependent variable (i.e. traumatic events; Nickerson & Brown, 2019). This reversal paradox suggests that future research should explore the strong relationship between food insecurity and traumatic events to provide insight into how the interaction of these two experiences impact DE in Black women. In light of this statistical phenomenon, the significant negative association between food insecurity and global DE in the multiple regression model should be interpreted with caution.

Non-significant links for food insecurity with binge eating and unhealthy weight control practices may be attributed to the demographic characteristics of the current study's sample. Most participants were between the age of 25 and 40, and some research suggests that the link between food insecurity and binge eating, in particular, is more pronounced for children and adolescents than adults (Hooper et al., 2022; Tester et al., 2016). More specifically, food insecurity is associated with an increased frequency of binge eating and diagnosis of binge eating disorder among children and adolescents (Linsenmeyer et al., 2021; Nagata et al., 2023). It is

posited that that this link is stronger during childhood because hunger induces physical and psychological stress and establishes maladaptive eating patterns during sensitive times of neurocognitive development (Barry et al., 2022; Ke & Ford-Jones, 2015). As acknowledged previously, the measure used in this study did not assess an individual's history with food insecurity. Therefore, it is plausible that, for some Black women, food insecurity during childhood may have a stronger association with binge eating and unhealthy weight control practices than food insecurity in the past year. Additionally, the majority of Black women in the current study reported an annual income of greater than $50,000, which resulted in limited variability in socioeconomic status compared to previous studies of food insecurity in the U.S. (Ivers & Cullen, 2011; Patterson et al., 2020). Additional longitudinal and cross-sectional research with socioeconomically diverse samples of Black women is needed to discern how food insecurity may be related to DE.

Overall, the pattern of findings suggest that factors related to social disempowerment and disconnection, and particularly exposure to trauma, are more robustly connected to global DE symptoms and binge eating than unhealthy weight control practices. Although all measures of DE in the current study correlate strongly with one another, the measure of global DE pathology is unique from the others in that it focuses on the measurement of restrictive eating behaviors and body image concerns. Keeping this in mind, findings may reflect the interaction between racial oppression and acculturation, which refers to the process of cultural, psychological, and/or behavioral change as a consequence of navigating two or more cultural groups (Kim & Abreu, 2001). Ingrained in racial oppression is the pressure to assimilate to the dominant culture, and some Black women may view their bodies as deficient, different, or less worthy than the White thin-ideal that is societally glorified for women in the U.S. (Gilbert, 2006; Small & Fuller, 2021;

Thompson, 1996). Indeed, adoption of Eurocentric values surrounding thinness and attractiveness have been hypothesized as risk factors for the development of body dissatisfaction and weight concerns among women belonging to marginalized racial and ethnic groups, and multiple studies demonstrate significant positive associations between acculturation levels and DE in Black women (Cachelin et al., 2006; Marais et al., 2003; Sussman et al., 2007).

It is also may be that restrictive eating behaviors and binge eating are connected in this sample. Food restriction precipitates an increased likelihood to engage in binge eating; which, in turn, contributes to restrictive eating behaviors as a compensatory response to binge eating (Goode et al., 2021). Indeed, this recurrent "binge-restrict" cycle is a common pattern observed among Black women with DE (Goode et al., 2020; Goode et al., 2021; Small & Fuller, 2021; Striegel-Moore et al., 2000). From this perspective, restrictive eating behaviors, rather than self-induced vomiting, laxative use, diuretic use, and exercise, may be functioning as the predominant unhealthy weight control practice in this sample. This conceptualization of restrictive eating behaviors would explain the lack of significant independent associations across all variables evident of social disempowerment and disconnection with unhealthy weight control practices. Clinicians have reported that many Black women with DE exhibit symptoms exemplifying a binge-restrict cycle (Small & Fuller, 2021; W. Trotter, personal communication, March 10, 2023), which has also emerged as a theme in qualitative data from Black women in the U.S. (Thompson, 1994; 1996). These observations highlight the heterogeneity in the potential interplay and co-occurrence of DE behaviors among Black women.

The Role of Embodiment

As expected, embodiment was uniquely negatively associated with global DE scores, binge eating, and unhealthy weight control practices, such that lower embodiment was

significantly associated with more DE. This finding is consistent with prior qualitative research (Piran, 2017; Thompson, 1994; 1996) and clinical reports (Small & Fuller, 2021; W. Trotter, personal communication, March 28, 2023); however, the current study is the first quantitative examination of embodiment in a sample of Black women. Notably, embodiment was highly significantly correlated with global DE scores and demonstrated large effect sizes across models after adjusting for food insecurity, traumatic events, and discrimination distress, highlighting that embodiment is a robust psychological construct related to Black women's DE. In accordance with the planned structural mediational model, embodiment may act as the pathway through which food insecurity, traumatic events, and discrimination distress lead to DE – although well-powered longitudinal studies are needed to evaluate this theory. As a sociocultural theory, the DTE identifies racial oppression as a form of social disempowerment that shapes embodiment and subsequently impacts an individual's engagement in embodied (e.g., adaptive eating patterns) or disembodied behaviors (e.g., DE; Piran, 2017).

Qualitative data from Piran (2017) support that differing dimensions of racial oppression intersect to disrupt Black women's embodiment and influence eating patterns. For instance, one young Black woman described engaging in restrictive eating behaviors in response to feeling insecure and disconnected from her body after being ostracized, bullied, and labeled as a "gangster" and "slut" by her peers, an experience that simultaneously exemplifies interpersonal discrimination and emotional trauma. Clinicians have also emphasized that Black women may depend on binge eating and/or restrictive eating behaviors as an accessible way to feel comfortable in their bodies while living in a society that deprives Black bodies of agency, safety, and belonging (Piran, 2017; Thompson, 1994). Taken together, these data suggest that predominant frameworks of DE concentrated solely on appearance-related constructs, often

developed and validated in samples of non-Hispanic White women, may not adequately capture Black women's bodily experiences and their relation to DE. While racial oppression is often thought of exclusively in terms of explicit prejudice and discrimination, its ubiquitous presence in structural conditions and interpersonal experiences may contribute to disrupted embodiment and increased DE in Black women. It is imperative that researchers move beyond comparison-based studies of DE between Black and non-Hispanic White women and investigate DE within the sociopolitical context of White supremacy, social disempowerment, and disrupted embodiment among Black women, specifically.

Limitations

The current study's findings should be interpreted in the context of several limitations. Importantly, this study is ongoing and therefore these data are preliminary. The current analyses should be replicated with the full target sample ($N = 300$) to determine the validity of the results. Recruitment was self-report and self-selected. Consequently, it is not possible to confirm that each participant was in fact a Black woman between 18 and 40 or the authenticity of their responses to the survey measures. Although the sample comprised Black women from a wide range of areas in the U.S., Black women are not a monolithic group. Black women have unique experiences of racial oppression and DE according to appearance, skin tone, country of origin, and numerous other qualities that are relevant to their identity and embodiment. For instance, some Black women have described colorism (i.e., discrimination based on skin color within the same racial and ethnic group) and the immigration process as having a profound impact on their perceptions of their body and development of DE (Piran, 2017; Small & Fuller, 2020). Additional work is needed to understand how these inter-group factors relate to oppression, embodiment, and DE among Black women. Moreover, this study was focused on a sensitive

period of embodiment development and the age range was limited to 18-40 years old. The DTE considers embodiment to be dynamic (Piran, 2017), and Black girls and women experience racial oppression and DE across the lifespan. Future research should attempt to expand this study to Black women of all ages. Relatedly, participants predominantly identified as heterosexual and cisgender, and it is unclear how the associations between oppression, embodiment, and DE may vary according to additional intersecting marginalized identities (e.g., gender identity, sexual orientation, bodily ability). For instance, gender diverse individuals face oppression tied to multiple identities and their meaning and experience of embodiment may qualitatively differ due to the potential distress that accompanies incongruity between one's gender identity and their visible body (Walsh & Einstein, 2020). It has also been reported that gender diverse individuals are at elevated risk for developing DE and threshold eating disorders compared to their cisgender counterparts (Hartman-Munick et al., 2021; Joy et al., 2022). Replication of this study with a gender and sexual orientation diverse sample will help to elucidate the generalizability of the observed significant associations between social disempowerment, embodiment, and DE.

Furthermore, the cross-sectional nature of the data prevents formal mediational testing. Thus, it is not certain that embodiment is the mechanism underlying the associations between food insecurity, traumatic events, discrimination distress, and DE. Numerous explanations may account for the association between social disempowerment-related factors and DE. For example, some research suggests that racial discrimination harms health through prolonged exposure to stress hormones which increase inflammation and predispose individuals of marginalized groups to negative physical and psychological outcomes (e.g., metabolic disease, depressive symptoms, cancer; Trent et al., 2019). Indeed, specific hormonal changes associated with racial discrimination, such as increased cortisol levels, are also associated with engagement

in some DE behaviors (e.g., binge eating; Coutinho et al., 2007; Gluck et al., 2004; Korous et al., 2017). It is posited that elevated cortisol activates a stress-response network, which, in turn, motivates binge eating to comfort oneself and decrease anxiety (Gluck, 2006).

Similarly, it is unclear to what extent these findings indicate concurrent experiences or specific temporal associations. It could be that Black women with DE subsequently experience lower embodiment given that women with threshold eating disorders report difficulty with attunement to internal bodily states (Khalsa et al., 2015). This association may be augmented in the context of racial oppression given that marginalization hinders Black women from participating in embodied practices (e.g., empowering relationships, access to nutritious food; Piran, 2017). It is also important to acknowledge that the measures employed in the current study did not assess the constructs in the same timeframe. The proximity and/or chronicity of food insecurity, traumatic events, and discriminatory experiences may influence the extent to which these factors relate to embodiment and DE. For instance, distress from recent discrimination may evoke a stronger effect on embodiment than distal discrimination due to the immediate threat to an individual's agency and safety, which could be restored over time through empowering embodied experiences (e.g., community belonging, vocational achievement). As such, prospective data are needed to conclude the sequence and timing of associations between racial oppression, embodiment, and DE among Black women.

Additionally, the constructs assessed in this study represent only three forms of racial oppression. Considering that the U.S. was established through the control, ownership, and violation of Black bodies, it is impossible to comprehensively measure racial oppression. With this understanding in mind, it is worth noting that food insecurity, traumatic events, and discrimination distress accounted for 17% of the variance in embodiment and 27% of the

variance in global DE scores, suggesting that additional research is needed to uncover other factors related to Black women's embodiment and DE. DE is also only one aspect of psychological health that may be connected to embodiment. Future research should consider investigating other forms of racial oppression (e.g., neighborhood safety) and psychopathology (e.g., self-injury) that may be related to embodiment (Mikhail et al., 2021; Piran & Teall, 2012). Examination of additional psychopathological constructs may be particularly important given that DE has high rates of comorbidity with numerous other conditions (e.g., self-injury, suicidality, anxiety; Kostro et al., 2014; Swinbourne et al., 2012).

Likewise, embodiment is negatively influenced by a multitude of adverse sociocultural experiences not addressed in the current study (e.g., lack of access to physical activity, hindered sexual expression and/or desire; Piran, 2017; Piran, 2023). Recently, Piran et al. (2023) developed and validated a new scale of key facilitative and adverse experiences in the social environment theorized to disrupt embodiment. This scale measures the presence of experiences related to social power and relational connections (e.g., prejudice and discrimination), physical freedom (e.g., diminished physical safety), and mental freedom (e.g., self-silencing) that may hinder or promote embodiment. Unfortunately, this scale was developed and validated four months after the launch of the current study and would be beneficial to include in future research on embodiment and DE among Black women. Finally, given that this is the first quantitative study of embodiment among Black women, the current sample size does not allow for reliability testing or validation of the measure of embodiment (EES). Although internal consistency was high ($\alpha = .95$), it is still necessary to thoroughly evaluate the psychometric properties of this survey in a large sample of Black women.

Future Directions and Implications

The current study's findings carry valuable scientific and clinical implications. These data add to the existing literature on DE among Black women by demonstrating connections between racial oppression, embodiment, and DE among Black women (Assari, 2018; Gilbert, 2006; Harrington et al., 2010; Salami et al., 2019). Given that Black women report less body dissatisfaction and thin-ideal internalization than non-Hispanic White women, there persists a misguided perception that Black women are untouched by DE (Small & Fuller, 2021; Smolak & Striegel-Moore, 2001). Results from the current study substantiate the notion that a focus on appearance may obscure the extent to which DE among Black women is linked to pervasive aspects of racial oppression woven into the fabric of U.S. society (Goode et al., 2020; Sonneville & Lipson, 2018). Additional research is needed to reveal the overt and insidious ways in which racial oppression may be related to DE among Black women. For example, examining the role of internalized racial oppression may be enlightening due to its significant associations with numerous negative health outcomes (e.g., anxiety, hypertension; Gale et al., 2020).

Given that effects sizes for the association between embodiment and global DE scores and binge eating were large, it may be worthwhile for clinicians to explore Black female client's embodiment when DE is a concern. The DTE highlights several experiences that may increase positive embodiment, such as joyful physical activity, engaging in activism, and empowering connections with friends and/or family (Piran, 2017). Even without establishing the temporal precedence of embodiment and DE, it may prove beneficial for clinicians to guide clients towards positive embodying experiences. Clinicians should also seek to understand the ways in which varying forms of racial oppression may manifest in clients' eating pathology. Although prior research has identified strategies that may aid Black individuals in coping with racial

oppression (e.g., increasing social support, strengthening ethnic identity; Brondolo et al., 2009), the affiliation between racial oppression and DE cannot be dismantled without system-level change, commitment, and collective action to address the permeating inequality in the U.S.

Conclusion

The current study is the first empirical investigation of racial oppression and its relationship with embodiment and DE among Black women in the U.S. The DTE offers a novel lens for understanding how these experiences relate to one another. White supremacy and dominating disempowering institutions and ideologies shape the ways in which Black women can socially, physically, and mentally engage with the world. It follows that Black women's body connection and comfort is disrupted by systemic and interpersonal disempowering forces that jeopardize their safety, agency, and freedom. Although preliminary, these findings provide further evidence that researchers must question the utility of appearance-based theories of Black women's DE and consider how social disempowerment is intertwined with body image concerns and eating patterns. Without this imperative shift in perspective, skewed assumptions and stereotypes will reinforce the longstanding erasure of Black women by labeling DE as individual pathologies rather than responses to disembodiment from social disempowerment and disconnection.

REFERENCES CITED

AAUW Reacts to Latest Gender Pay Gap Data. (2022). AAUW : Empowering Women Since 1881. Retrieved October 25, 2022, from https://www.aauw.org/resources/news/media/press-releases/aauw-reacts-to-latest-gender-pay-gap-data/

Abrams, J. A., Hill, A., & Maxwell, M. (2019). Underneath the mask of the strong Black woman schema: Disentangling influences of strength and self-silencing on depressive symptoms among U.S. Black women. *Sex Roles*, *80*(9), 517–526. https://doi.org/10.1007/s11199-018-0956-y

Ahima, R. S., & Lazar, M. A. (2013). The health risk of obesity—better metrics imperative. *Science*, *341*(6148), 856–858. https://doi.org/10.1126/science.1241244

Alegría, M., Araneta, M. R., & Rivers, B. (2019). The National Advisory Council on minority health and health disparities reflection. *American Journal of Public Health*, *109*(S1), S14–S15. https://doi.org/10.2105/AJPH.2019.304961

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* (5th ed). American Psychiatric Publishing.

Antin, T. M. J., & Hunt, G. (2013). Embodying both stigma and satisfaction: An interview study of African American women. *Critical Public Health*, *23*(1), 17–31. https://doi.org/10.1080/09581596.2011.634784

Ashley, W. (2014). The angry Black woman: The impact of pejorative stereotypes on psychotherapy with Black women. *Social Work in Public Health*, *29*(1), 27–34. https://doi.org/10.1080/19371918.2011.619449

Assari, S. (2018). Perceived discrimination and binge eating disorder: Gender difference in African Americans. *Journal of Clinical Medicine*, *7*(5), 89. https://doi.org/10.3390/jcm7050089

Baer, T. E., Scherer, E. A., Fleegler, E. W., & Hassan, A. (2015). Food insecurity and the burden of health-related social problems in an urban youth population. *Journal of Adolescent Health*, *57*(6), 601–607. https://doi.org/10.1016/j.jadohealth.2015.08.013

Barnes, D. M., & Bates, L. M. (2017). Do racial patterns in psychological distress shed light on the Black–White depression paradox? A systematic review. *Social Psychiatry and Psychiatric Epidemiology*, *52*(8), 913–928. https://doi.org/10.1007/s00127-017-1394-9

Barrett, C. B. (2010). Measuring food insecurity. *Science*, *327*(5967), 825–828. https://doi.org/10.1126/science.1182768

Barry, M. R., Sonneville, K. R., McGowan, A. R., Needham, B. L., Kobayashi, L. C., & Leung, C. W. (2022). Caregiver-reported household food insecurity and child-reported food insecurity in relation to eating disorder risk factors and symptoms among preadolescent children. *International Journal of Eating Disorders*, *55*(10), 1331–1341. https://doi.org/10.1002/eat.23784

Baugh, E., Mullis, R., Mullis, A., Hicks, M., & Peterson, G. (2010). Ethnic identity and body image among black and white college females. *Journal of American College Health: J of ACH*, *59*(2), 105–109. https://doi.org/10.1080/07448481.2010.483713

Bauldry, S. (2015). Structural Equation Modeling. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences (Second Edition)* (pp. 615–620). Elsevier. https://doi.org/10.1016/B978-0-08-097086-8.44055-9

Beauboeuf-Lafontant, T. (2003). Strong and large black women?: Exploring relationships between deviant womanhood and weight. *Gender & Society*, *17*(1), 111–121. https://doi.org/10.1177/0891243202238981

Becker, A. E., Hadley Arrindell, A., Perloe, A., Fay, K., & Striegel-Moore, R. H. (2010). A qualitative study of perceived social barriers to care for eating disorders: Perspectives from ethnically diverse health care consumers. *International Journal of Eating Disorders*, *43*(7), 633–647. https://doi.org/10.1002/eat.20755

Becker, C. B., Middlemass, K., Taylor, B., Johnson, C., & Gomez, F. (2017). Food insecurity and eating disorder pathology. *International Journal of Eating Disorders*, *50*(9), 1031–1040. https://doi.org/10.1002/eat.22735

Berg, K. C., Peterson, C. B., Frazier, P., & Crow, S. J. (2012). Psychometric evaluation of the eating disorder examination and eating disorder examination-questionnaire: A systematic review of the literature. *The International Journal of Eating Disorders*, *45*(3), 428–438. https://doi.org/10.1002/eat.20931

Bernard, E. (2019). *Black is the body: Stories from my grandmother's time, my mother's time, and mine* (1st Vintage Books edition). Vintage Books.

Black, L. L., Johnson, R., & VanHoose, L. (2015). The relationship between perceived racism/discrimination and health among Black American women: A review of the literature from 2003 to 2013. *Journal of Racial and Ethnic Health Disparities*, *2*(1), 11–20. https://doi.org/10.1007/s40615-014-0043-1

Boykin, A. A., Ezike, N. C., & Myers, A. J. (2023). Model-data fit evaluation: Posterior checks and Bayesian model selection. In R. J. Tierney, F. Rizvi, & K. Ercikan (Eds.), *International Encyclopedia of Education (Fourth Edition)* (pp. 279–289). Elsevier. https://doi.org/10.1016/B978-0-12-818630-5.10038-7

Breiding, M. J. (2014). Prevalence and characteristics of sexual violence, stalking, and intimate partner violence victimization—National intimate partner and sexual violence survey, United States, 2011. *Morbidity and Mortality Weekly Report. Surveillance Summaries (Washington, D.C. : 2002)*, *63*(8), 1–18.

Briere, J., & Scott, C. (2007). Assessment of trauma symptoms in eating-disordered populations. *Eating Disorders*, *15*(4), 347–358. https://doi.org/10.1080/10640260701454360

Brondolo, E., Brady, N., Pencille, M., Beatty, D., & Contrada, R. J. (2009). Coping with racism: A selective review of the literature and a theoretical and methodological critique. *Journal of Behavioral Medicine*, *32*(1), 64–88. https://doi.org/10.1007/s10865-008-9193-0

Brownlow, B. N., Sosoo, E. E., Long, R. N., Hoggard, L. S., Burford, T. I., & Hill, L. K. (2019). Sex differences in the impact of racial discrimination on mental health among Black Americans. *Current Psychiatry Reports*, *21*(11), 112. https://doi.org/10.1007/s11920-019-1098-9

Burke, N. L., Schaefer, L. M., Hazzard, V. M., & Rodgers, R. F. (2020). Where identities converge: The importance of intersectionality in eating disorders research. *International Journal of Eating Disorders*, *53*(10), 1605–1609. https://doi.org/10.1002/eat.23371

Burnette, C. B., Luzier, J. L., Weisenmuller, C. M., & Boutté, R. L. (2022). A systematic review of sociodemographic reporting and representation in eating disorder psychotherapy treatment trials in the United States. *International Journal of Eating Disorders*, *55*(4), 423–454. https://doi.org/10.1002/eat.23699

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

Cachelin, F., Veisel, C., Barzegarnazari, E., & Weissman, R. (2006). Disordered eating, acculturation, and treatment-seeking in a community sample of Hispanic, Asian, Black, and White women. *Psychology of Women Quarterly*, *24*, 244–253. https://doi.org/10.1111/j.1471-6402.2000.tb00206.x

Campos, P., Saguy, A., Ernsberger, P., Oliver, E., & Gaesser, G. (2006). The epidemiology of overweight and obesity: Public health crisis or moral panic? *International Journal of Epidemiology*, *35*(1), 55–60. https://doi.org/10.1093/ije/dyi254

Carbone, S., Canada, J. M., Billingsley, H. E., Siddiqui, M. S., Elagizi, A., & Lavie, C. J. (2019). Obesity paradox in cardiovascular disease: Where do we stand? *Vascular Health and Risk Management*, *15*, 89–100. https://doi.org/10.2147/VHRM.S168946

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (Eds.). (2003). *Applied multiple regression correlation analysis for the behavioral sciences* (3. ed). Erlbaum.

Coleman-Jensen, A. (2018). *Household food security in the United States in 2018*. 47.

Colton, D., & Covert, R. W. (2007). *Designing and constructing instruments for social research and evaluation*. John Wiley & Sons.

Cook, R. D. (1977). Detection of influential observation in linear regression. *Technometrics*, *19*(1), 15–18. https://doi.org/10.2307/1268249

Coutinho, W. F., Moreira, R. O., Spagnol, C., & Appolinario, J. C. (2007). Does binge eating disorder alter cortisol secretion in obese women? *Eating Behaviors*, *8*(1), 59–64. https://doi.org/10.1016/j.eatbeh.2006.01.002

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, *43*(6), 1241–1299. https://doi.org/10.2307/1229039

Dale, S. K., Dean, T., Sharma, R., Reid, R., Saunders, S., & Safren, S. A. (2019). Microaggressions and discrimination relate to barriers to care among Black women living with HIV. *AIDS Patient Care and STDs*, *33*(4), 175–183. https://doi.org/10.1089/apc.2018.0258

De Maynard, V. A. (2010). The impact of 'racism' on the dissociative experiences scale. *International Journal of Culture and Mental Health*, *3*(2), 77–95. https://doi.org/10.1080/17447143.2010.488321

Dinour, L. M., Bergen, D., & Yeh, M.-C. (2007). The food insecurity–obesity paradox: A review of the literature and the role food stamps may play. *Journal of the American Dietetic Association*, *107*(11), 1952–1961. https://doi.org/10.1016/j.jada.2007.08.006

Dong, Y., & Peng, C.-Y. J. (2013). Principled missing data methods for researchers. *SpringerPlus*, *2*(1). https://doi.org/10.1186/2193-1801-2-222

Dunn, C. E., Hood, K. B., & Owens, B. D. (2019). Loving myself through thick and thin: Appearance contingent self-worth, gendered racial microaggressions and African American women's body appreciation. *Body Image*, *30*, 121–126. https://doi.org/10.1016/j.bodyim.2019.06.003

Elhai, J. D., Calhoun, P. S., & Ford, J. D. (2008). Statistical procedures for analyzing mental health services data. *Psychiatry Research*, *160*(2), 129–136. https://doi.org/10.1016/j.psychres.2007.07.003

Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *The International Journal of Eating Disorders*, *16*(4), 363–370.

Fani, N., Carter, S. E., Harnett, N. G., Ressler, K. J., & Bradley, B. (2021). Association of racial discrimination with neural response to threat in Black women in the U.S. exposed to trauma. *JAMA Psychiatry*, *78*(9), 1005–1012. https://doi.org/10.1001/jamapsychiatry.2021.1480

Flowers, K. C., Levesque, M. J., & Fischer, S. (2012). The relationship between maladaptive eating behaviors and racial identity among African American women in college. *Journal of Black Psychology*, *38*(3), 290–312. https://doi.org/10.1177/0095798411416459

Fontaine, K. R., Redden, D. T., Wang, C., Westfall, A. O., & Allison, D. B. (2003). Years of life lost due to obesity. *JAMA*, *289*(2), 187–193. https://doi.org/10.1001/jama.289.2.187

Gale, M. M., Pieterse, A. L., Lee, D. L., Huynh, K., Powell, S., & Kirkinis, K. (2020). A meta-analysis of the relationship between internalized racial oppression and health-related outcomes. *The Counseling Psychologist*, *48*(4), 498–525. https://doi.org/10.1177/0011000020904454

Gershuny, B. S., & Thayer, J. F. (1999). Relations among psychological trauma, dissociative phenomena, and trauma-related distress: A review and integration. *Clinical Psychology Review*, *19*(5), 631–657. https://doi.org/10.1016/s0272-7358(98)00103-2

Gilbert, S. C. (2006). Eating disorders in women of color. *Clinical Psychology: Science and Practice*, *10*(4), 444–455. https://doi.org/10.1093/clipsy.bpg045

Gluck, M. E. (2006). Stress response and binge eating disorder. *Appetite*, *46*(1), 26–30. https://doi.org/10.1016/j.appet.2005.05.004

Gluck, M. E., Geliebter, A., Hung, J., & Yahav, E. (2004). Cortisol, hunger, and desire to binge eat following a cold stress test in obese women with binge eating disorder. *Psychosomatic Medicine*, *66*(6), 876. https://doi.org/10.1097/01.psy.0000143637.63508.47

Gluck, R. L., Hartzell, G. E., Dixon, H. D., Michopoulos, V., Powers, A., Stevens, J. S., Fani, N., Carter, S., Schwartz, A. C., Jovanovic, T., Ressler, K. J., Bradley, B., & Gillespie, C. F. (2021). Trauma exposure and stress-related disorders in a large, urban, predominantly African-American, female sample. *Archives of Women's Mental Health*, *24*(6), 893–901. https://doi.org/10.1007/s00737-021-01141-4

Goode, R. W., Cowell, M. M., Mazzeo, S. E., Cooper-Lewter, C., Forte, A., Olayia, O., & Bulik, C. M. (2020). Binge eating and binge-eating disorder in Black women: A systematic review. *International Journal of Eating Disorders*, *53*(4), 491–507. https://doi.org/10.1002/eat.23217

Goode, R. W., Kalarchian, M. A., Craighead, L., Conroy, M. B., Gary-Webb, T., Bennett, E., Cowell, M. M., & Burke, L. E. (2020). Perceptions and experiences of appetite awareness training among African-American women who binge eat. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *25*(2), 275–281. https://doi.org/10.1007/s40519-018-0577-z

Goode, R. W., Watson, H. J., Masa, R., & Bulik, C. M. (2021). Prevalence and contributing factors to recurrent binge eating and obesity among black adults with food insufficiency: Findings from a cross-sectional study from a nationally-representative sample. *Journal of Eating Disorders*, *9*, 154. https://doi.org/10.1186/s40337-021-00509-2

Gordon, K. H., Perez, M., & Joiner, T. E. (2002). The impact of racial stereotypes on eating disorder recognition. *International Journal of Eating Disorders*, *32*(2), 219–224. https://doi.org/10.1002/eat.10070

Grabe, S., & Hyde, J. S. (2006). Ethnicity and body dissatisfaction among women in the United States: A meta-analysis. *Psychological Bulletin*, *132*(4), 622–640. https://doi.org/10.1037/0033-2909.132.4.622

Greer, T. M. (2011). Coping strategies as moderators of the relation between individual race-related stress and mental health symptoms for African American women. *Psychology of Women Quarterly*, *35*(2), 215–226. https://doi.org/10.1177/0361684311399388

Grollman, E. (2012). Multiple forms of perceived discrimination and health among adolescents and young adults. *Journal of Health and Social Behavior*, *53*, 199–214. https://doi.org/10.1177/0022146512444289

Haedt-Matt, A. A., & Keel, P. K. (2011). Revisiting the affect regulation model of binge eating: A meta-analysis of studies using ecological momentary assessment. *Psychological Bulletin*, *137*(4), 660–681. https://doi.org/10.1037/a0023660

Harrington, E. F., Crowther, J. H., Henrickson, H. C. P., & Mickelson, K. (2006). The relationships among trauma, stress, ethnicity, and binge eating. *Cultural Diversity and Ethnic Minority Psychology*, *12*(2), 212–229. https://doi.org/10.1037/1099-9809.12.2.212

Harrington, E. F., Crowther, J. H., & Shipherd, J. C. (2010). Trauma, binge eating, and the "strong Black woman." *Journal of Consulting and Clinical Psychology*, *78*(4), 469–479. https://doi.org/10.1037/a0019174

Harrop, E. N., Mensinger, J. L., Moore, M., & Lindhorst, T. (2021). Restrictive eating disorders in higher weight persons: A systematic review of atypical anorexia nervosa prevalence and consecutive admission literature. *International Journal of Eating Disorders*, *54*(8), 1328–1357. https://doi.org/10.1002/eat.23519

Hart, C. N., Raynor, H. A., Osterholt, K. M., Jelalian, E., & Wing, R. R. (2011). Eating and activity habits of overweight children on weekdays and weekends. *International Journal of Obesity*, *6*(5–6), 467–472. https://doi.org/10.3109/17477166.2011.590204

Hartman-Munick, S. M., Silverstein, S., Guss, C. E., Lopez, E., Calzo, J. P., & Gordon, A. R. (2021). Eating disorder screening and treatment experiences in transgender and gender diverse young adults. *Eating Behaviors*, *41*, 101517. https://doi.org/10.1016/j.eatbeh.2021.101517

Hazzard, V. M., Loth, K. A., Hooper, L., & Becker, C. B. (2020). Food insecurity and eating disorders: A review of emerging evidence. *Current Psychiatry Reports*, *22*(12), 74. https://doi.org/10.1007/s11920-020-01200-0

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin*, *110*(1), 86–108. https://doi.org/10.1037/0033-2909.110.1.86

Helms, J. E., & Cook, D. A. (1999). *Using race and culture in counseling and psychotherapy: Theory and process*. Allyn & Bacon.

Hernández, D., & Rehman, B. (2002). *Colonize this!: Young women of color on today's feminism*. Seal Press.

Hilbe, J. M. (2011). *Negative Binomial Regression* (2nd ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511973420

Himmerich, H., Kan, C., Au, K., & Treasure, J. (2021). Pharmacological treatment of eating disorders, comorbid mental health problems, malnutrition and physical health consequences. *Pharmacology & Therapeutics*, *217*, 107667. https://doi.org/10.1016/j.pharmthera.2020.107667

Hooper, L., Mason, S. M., Telke, S., Larson, N., & Neumark-Sztainer, D. (2022). Experiencing household food insecurity during adolescence predicts disordered eating and elevated body mass index 8 years later. *Journal of Adolescent Health*, *70*(5), 788–795. https://doi.org/10.1016/j.jadohealth.2021.11.026

Horowitz, M. J. (2015). Effects of trauma on sense of self. *Journal of Loss and Trauma*, *20*(2), 189–193. https://doi.org/10.1080/15325024.2014.897578

Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey replication. *Biological Psychiatry*, *61*(3), 348–358. https://doi.org/10.1016/j.biopsych.2006.03.040

Humphreys, S. (2010). The unethical use of BMI in contemporary general practice. *The British Journal of General Practice*, *60*(578), 696–697. https://doi.org/10.3399/bjgp10X515548

Ivers, L. C., & Cullen, K. A. (2011). Food insecurity: Special considerations for women. *The American Journal of Clinical Nutrition*, *94*(6), 1740S-1744S. https://doi.org/10.3945/ajcn.111.012617

James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). Linear Regression. In G. James, D. Witten, T. Hastie, & R. Tibshirani (Eds.), *An Introduction to Statistical Learning: With Applications in R* (pp. 59–126). Springer. https://doi.org/10.1007/978-1-4614-7138-7_3

Johnson, J. C., Gamst, G., Meyers, L. S., Arellano-Morales, L., & Shorter-Gooden, K. (2016). Development and validation of the African American Women's Shifting Scale (AAWSS). *Cultural Diversity and Ethnic Minority Psychology*, *22*(1), 11–25. https://doi.org/10.1037/cdp0000039

Johnson, S. C., & Arbona, C. (2006). The relation of ethnic identity, racial identity, and race-related stress among African American college students. *Journal of College Student Development*, *47*(5), 495–507. https://doi.org/10.1353/csd.2006.0057

Jones, H. L., Cross, W. E., & DeFour, D. C. (2007). Race-related stress, racial identity attitudes, and mental health among Black women. *Journal of Black Psychology*, *33*(2), 208–231. https://doi.org/10.1177/0095798407299517

Joy, P., White, M., & Jones, S. (2022). Exploring the influence of gender dysphoria in eating disorders among gender diverse individuals. *Nutrition & Dietetics*, *79*(3), 390–399. https://doi.org/10.1111/1747-0080.12727

Kärkkäinen, U., Mustelin, L., Raevuori, A., Kaprio, J., & Keski-Rahkonen, A. (2018). Do disordered eating behaviours have long-term health-related consequences? *European Eating Disorders Review*, *26*(1), 22–28. https://doi.org/10.1002/erv.2568

Kass, R. E., & Raftery, A. E. (1995). Bayes Factors. *Journal of the American Statistical Association*, *90*(430), 773–795. https://doi.org/10.1080/01621459.1995.10476572

Ke, J., & Ford-Jones, E. L. (2015). Food insecurity and hunger: A review of the effects on children's health and behaviour. *Paediatrics & Child Health*, *20*(2), 89–91.

Kelly, N. R., Cotter, E. W., & Mazzeo, S. E. (2012). Eating Disorder Examination Questionnaire (EDE-Q): Norms for Black women. *Eating Behaviors*, *13*(4), 429–432. https://doi.org/10.1016/j.eatbeh.2012.09.001

Khalsa, S. S., Craske, M. G., Li, W., Vangala, S., Strober, M., & Feusner, J. D. (2015). Altered interoceptive awareness in anorexia nervosa: Effects of meal anticipation, consumption and bodily arousal. *The International Journal of Eating Disorders*, *48*(7), 889–897. https://doi.org/10.1002/eat.22387

Kim, B. S. K., & Abreu, J. M. (2001). Acculturation measurement: Theory, current instruments, and future directions. In *Handbook of multicultural counseling, 2nd ed* (pp. 394–424). Sage Publications, Inc.

Kling, J., Counsell, A., Frisén, A., Holmqvist Gattario, K., & Piran, N. (2021). Translation and psychometric evaluation of the Experience of Embodiment Scale in a Swedish community sample of young women and men. *Body Image*, *39*, 259–265. https://doi.org/10.1016/j.bodyim.2021.09.004

Kong, S., & Bernstein, K. (2009). Childhood trauma as a predictor of eating psychopathology and its mediating variables in patients with eating disorders. *Journal of Clinical Nursing*, *18*(13), 1897–1907. https://doi.org/10.1111/j.1365-2702.2008.02740.x

Korous, K. M., Causadias, J. M., & Casper, D. M. (2017). Racial discrimination and cortisol output: A meta-analysis. *Social Science & Medicine*, *193*, 90–100. https://doi.org/10.1016/j.socscimed.2017.09.042

Kostro, K., Lerman, J. B., & Attia, E. (2014). The current status of suicide and self-injury in eating disorders: A narrative review. *Journal of Eating Disorders*, *2*(1), 19. https://doi.org/10.1186/s40337-014-0019-x

Kruschke, J. K. (2021). Bayesian analysis reporting guidelines. *Nature Human Behaviour*, *5*(10), Article 10. https://doi.org/10.1038/s41562-021-01177-7

Lee, K. M., Hunger, J. M., & Tomiyama, A. J. (2021). Weight stigma and health behaviors: Evidence from the Eating in America Study. *International Journal of Obesity*, *45*(7), Article 7. https://doi.org/10.1038/s41366-021-00814-5

LePage, B., & Javaid, S. (2022). *Economic, food, and housing insecurity remain high for women and families entering the third year of the pandemic*. 7.

Leys, C., Delacre, M., Mora, Y. L., Lakens, D., & Ley, C. (2019). How to classify, detect, and manage univariate and multivariate outliers, with emphasis on pre-registration. *International Review of Social Psychology*, *32*. https://doi.org/10.5334/irsp.289

Li, P., Stuart, E. A., & Allison, D. B. (2015). Multiple imputation: A Flexible tool for handling missing data. *JAMA*, *314*(18), 1966–1967. https://doi.org/10.1001/jama.2015.15281

Liao, K. Y.-H., Wei, M., & Yin, M. (2020). The misunderstood schema of the strong Black woman: Exploring its mental health consequences and coping responses among African American women. *Psychology of Women Quarterly*, *44*(1), 84–104. https://doi.org/10.1177/0361684319883198

Lieberman, A. G., Stock, M. L., AuBuchon, K. E., Beekman, J. B., & Lambert, S. F. (2021). Intersectional discrimination from Black women, White women, Black men, or White men impacts young adult Black women's affective states and risky health cognitions. *Psychology & Health*, *0*(0), 1–17. https://doi.org/10.1080/08870446.2021.1941962

Linsenmeyer, W. R., Katz, I. M., Reed, J. L., Giedinghagen, A. M., Lewis, C. B., & Garwood, S. K. (2021). Disordered eating, food insecurity, and weight status among transgender and gender nonbinary youth and young adults: A cross-sectional study using a nutrition screening protocol. *LGBT Health*, *8*(5), 359–366. https://doi.org/10.1089/lgbt.2020.0308

Lipson, S., & Sonneville, K. (2017). Eating disorder symptoms among undergraduate and graduate students at 12 U.S. colleges and universities. *Eating Behaviors*, *24*, 81–88. https://doi.org/10.1016/j.eatbeh.2016.12.003

Longmire-Avital, B., & McQueen, C. (2019). Exploring a relationship between race-related stress and emotional eating for collegiate Black American women. *Women & Health*, *59*(3), 240–251. https://doi.org/10.1080/03630242.2018.1478361

Lorah, J., & Womack, A. (2019). Value of sample size for computation of the Bayesian information criterion (BIC) in multilevel modeling. *Behavior Research Methods*, *51*(1), 440–450. https://doi.org/10.3758/s13428-018-1188-3

Lowy, A. S., Rodgers, R. F., Franko, D. L., Pluhar, E., & Webb, J. B. (2021). Body image and internalization of appearance ideals in Black women: An update and call for culturally-sensitive research. *Body Image*, *39*, 313–327. https://doi.org/10.1016/j.bodyim.2021.10.005

Madowitz, J., Matheson, B. E., & Liang, J. (2015). The relationship between eating disorders and sexual trauma. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *20*(3), 281–293. https://doi.org/10.1007/s40519-015-0195-y

Magruder, K. M., McLaughlin, K. A., & Elmore Borbon, D. L. (2017). Trauma is a public health issue. *European Journal of Psychotraumatology*, *8*(1), 1375338. https://doi.org/10.1080/20008198.2017.1375338

Malecki, J., Rhodes, P., & Ussher, J. (2018). Childhood trauma and Anorexia nervosa: From body image to embodiment. *Health Care for Women International*, *39*(8), 936–951. https://doi.org/10.1080/07399332.2018.1492268

Malson, H., & Burns, M. (Eds.). (2009). *Critical feminist approaches to eating dis/orders* (0 ed.). Routledge. https://doi.org/10.4324/9780203876442

Marais, D. L., Wassenaar, D. R., & Kramers, A. L. (2003). Acculturation and eating disorder symptomatology in Black men and women. *Eating and Weight Disorders: EWD*, *8*(1), 44–54. https://doi.org/10.1007/BF03324988

Marques, L., Alegria, M., Becker, A. E., Chen, C.-N., Fang, A., Chosak, A., & Diniz, J. B. (2011). Comparative prevalence, correlates of impairment, and service utilization for eating disorders across US ethnic groups: Implications for reducing ethnic disparities in health care access for eating disorders. *The International Journal of Eating Disorders*, *44*(5), 412–420. https://doi.org/10.1002/eat.20787

Martin, J., & Hall, D. (2016). R 2 measures for zero-inflated regression models for count data with excess zeros. *Journal of Statistical Computation and Simulation*, *86*, 1–14. https://doi.org/10.1080/00949655.2016.1186166

Mason, M., Mennis, J., Moore, M., & Brown, A. (2020). The role of sex, executive functioning, and perceptions of safety on urban adolescent substance use. *Addiction Research & Theory*, *28*(2), 144–151. https://doi.org/10.1080/16066359.2019.1601708

Mason, T. B., Mozdzierz, P., Wang, S., & Smith, K. E. (2021a). Discrimination and eating disorder psychopathology: A meta-analysis. *Behavior Therapy*, *52*(2), 406–417. https://doi.org/10.1016/j.beth.2020.05.003

Mason, T. B., Mozdzierz, P., Wang, S., & Smith, K. E. (2021b). Discrimination and eating disorder psychopathology: A meta-analysis. *Behavior Therapy*, *52*(2), 406–417. https://doi.org/10.1016/j.beth.2020.05.003

Maxie-Moreman, A. D., & Tynes, B. M. (2022). Exposure to online racial discrimination and traumatic events online in Black adolescents and emerging adults. *Journal of Research on Adolescence*, *32*(1), 254–269. https://doi.org/10.1111/jora.12732

McGowan, A., Barry, M. R., Sonneville, K. R., & Leung, C. W. (2022). Greater social adversity is associated with more disordered eating attitudes and behaviors among children from Southeast Michigan. *International Journal of Eating Disorders*, *55*(12), 1670–1677. https://doi.org/10.1002/eat.23775

Merleau-Ponty, M. (1992). *Texts and dialogues*. Humanities Press.

Middlemass, K. M., Cruz, J., Gamboa, A., Johnson, C., Taylor, B., Gomez, F., & Becker, C. B. (2020). Food insecurity & dietary restraint in a diverse urban population. *Eating Disorders*, *0*(0), 1–14. https://doi.org/10.1080/10640266.2020.1723343

Mitchell, A., & Herring, K. (1998). *What the blues is all about: Black women overcoming stress and depression* (1st ed). Berkeley Pub. Group.

Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C. (2006). Eating Disorder Examination Questionnaire (EDE-Q): Norms for young adult women. *Behaviour Research and Therapy*, *44*(1), 53–62. https://doi.org/10.1016/j.brat.2004.12.003

Nagata, J. M., Chu, J., Cervantez, L., Ganson, K. T., Testa, A., Jackson, D. B., Murray, S. B., & Weiser, S. D. (2023). Food insecurity and binge-eating disorder in early adolescence. *International Journal of Eating Disorders*. https://doi.org/10.1002/eat.23944

Näring, G., & Nijenhuis, E. R. S. (2005). Relationships between self-reported potentially traumatizing events, psychoform and somatoform dissociation, and absorption, in two non-clinical populations. *The Australian and New Zealand Journal of Psychiatry*, *39*(11–12), 982–988. https://doi.org/10.1080/j.1440-1614.2005.01701.x

Nickerson, C. A., & Brown, N. J. L. (2019). Simpson's Paradox is suppression, but Lord's Paradox is neither: Clarification of and correction to Tu, Gunnell, and Gilthorpe (2008). *Emerging Themes in Epidemiology*, *16*(1), 5. https://doi.org/10.1186/s12982-019-0087-0

Nijenhuis, E. R. S., Van der Hart, O., & Kruger, K. (2002). The psychometric characteristics of the Traumatic Experiences Checklist (TEC): First findings among psychiatric outpatients. *Clinical Psychology & Psychotherapy*, *9*(3), 200–210. https://doi.org/10.1002/cpp.332

O'Brien, K. M., Whelan, D. R., Sandler, D. P., Hall, J. E., & Weinberg, C. R. (2017). Predictors and long-term health outcomes of eating disorders. *PLOS ONE*, *12*(7), e0181104. https://doi.org/10.1371/journal.pone.0181104

Osa, M. L., Siegel, J., Meadows, A., Elbe, C., & Calogero, R. M. (2021). Stigmatizing effects of weight status on lay perceptions of eating disorder-related distress. *Eating Disorders*, *0*(0), 1–11. https://doi.org/10.1080/10640266.2020.1855571

Overstreet, N. M., Quinn, D. M., & Agocha, V. B. (2010). Beyond thinness: The influence of a curvaceous body ideal on body dissatisfaction in Black and White women. *Sex Roles*, *63*(1), 91–103. https://doi.org/10.1007/s11199-010-9792-4

Palmisano, G. L., Innamorati, M., & Vanderlinden, J. (2016). Life adverse experiences in relation with obesity and binge eating disorder: A systematic review. *Journal of Behavioral Addictions*, *5*(1), 11–31. https://doi.org/10.1556/2006.5.2016.018

Patterson, J. G., Russomanno, J., Teferra, A. A., & Jabson Tree, J. M. (2020). Disparities in food insecurity at the intersection of race and sexual orientation: A population-based study of adult women in the United States. *SSM - Population Health*, *12*, 100655. https://doi.org/10.1016/j.ssmph.2020.100655

Payne, E. H., Gebregziabher, M., Hardin, J. W., Ramakrishnan, V., & Egede, L. E. (2018). An empirical approach to determine a threshold for assessing overdispersion in Poisson and negative binomial models for count data. *Communications in Statistics: Simulation and Computation*, *47*(6), 1722–1738. https://doi.org/10.1080/03610918.2017.1323223

Peterson, C. B., Crosby, R. D., Wonderlich, S. A., Joiner, T., Crow, S. J., Mitchell, J. E., Bardone-Cone, A. M., Klein, M., & le Grange, D. (2007). Psychometric properties of the eating disorder examination-questionnaire: Factor structure and internal consistency. *The International Journal of Eating Disorders*, *40*(4), 386–389. https://doi.org/10.1002/eat.20373

Pike, K. M., Dohm, F. A., Striegel-Moore, R. H., Wilfley, D. E., & Fairburn, C. G. (2001). A comparison of black and white women with binge eating disorder. *The American Journal of Psychiatry*, *158*(9), 1455–1460. https://doi.org/10.1176/appi.ajp.158.9.1455

Piran, N. (2016). Embodied possibilities and disruptions: The emergence of the Experience of Embodiment construct from qualitative studies with girls and women. *Body Image*, *18*, 43–60. https://doi.org/10.1016/j.bodyim.2016.04.007

Piran, N. (2017). *Journeys of embodiment at the intersection of body and culture: The developmental theory of embodiment* (pp. xv, 320). Elsevier Academic Press.

Piran, N., & Teall, T. (2012). The Developmental Theory of Embodiment. *Preventing Eating-Related and Weight-Related Disorders: Collaborative Research, Advocacy, and Policy Change*, 169–198.

Piran, N., Teall, T., & Counsell, A. (2020). The experience of embodiment scale: Development and psychometric evaluation. *Body Image*, *34*, 117–134. https://doi.org/10.1016/j.bodyim.2020.05.007

Piran, N., Teall, T. L., & Counsell, A. (2023). Expanding the social lens: A quantitative study of the developmental theory of embodiment. *Body Image*, *44*, 246–261. https://doi.org/10.1016/j.bodyim.2022.11.009

Potterton, R., Richards, K., Allen, K., & Schmidt, U. (2020). Eating disorders during emerging adulthood: A systematic scoping review. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.03062

Powers, A., Mekawi, Y., Fickenwirth, M., Nugent, N. R., Dixon, H. D., Minton, S., Kim, Y. J., Gluck, R., Carter, S., Fani, N., Schwartz, A. C., Bradley, B., Umpierrez, G. E., Pace, T. W. W., Jovanovic, T., Michopoulos, V., & Gillespie, C. F. (2021). Emotion dysregulation and dissociation contribute to decreased heart rate variability to an acute psychosocial stressor in trauma-exposed Black women. *Journal of Psychiatric Research*, *142*, 125–131. https://doi.org/10.1016/j.jpsychires.2021.07.032

Prefit, A.-B., Cândea, D. M., & Szentagotai-Tătar, A. (2019). Emotion regulation across eating pathology: A meta-analysis. *Appetite*, *143*, 104438. https://doi.org/10.1016/j.appet.2019.104438

Raftery, A. E. (1995). Bayesian model selection in social research. *Sociological Methodology*, *25*, 111–163. https://doi.org/10.2307/271063

Reagan, P., & Hersch, J. (2005). Influence of race, gender, and socioeconomic status on binge eating frequency in a population-based sample. *International Journal of Eating Disorders*, *38*(3), 252–256. https://doi.org/10.1002/eat.20177

Romano, K. A., Heron, K. E., & Henson, J. M. (2021). Examining associations among weight stigma, weight bias internalization, body dissatisfaction, and eating disorder symptoms: Does weight status matter? *Body Image*, *37*, 38–49. https://doi.org/10.1016/j.bodyim.2021.01.006

Sala, M., Reyes-Rodríguez, M. L., Bulik, C. M., & Bardone-Cone, A. (2013). Race, ethnicity, and eating disorder recognition by peers. *Eating Disorders*, *21*(5), 423–436. https://doi.org/10.1080/10640266.2013.827540

Salami, T. K., Carter, S. E., Cordova, B., Flowers, K. C., & Walker, R. L. (2019). The influence of race-related stress on eating pathology: The mediating role of depression and moderating role of cultural worldview among Black American women. *Journal of Black Psychology*, *45*(6–7), 571–598. https://doi.org/10.1177/0095798419887632

Schaumberg, K., Reilly, E. E., Anderson, L. M., Gorrell, S., Wang, S. B., & Sala, M. (2018). Improving prediction of eating-related behavioral outcomes with zero-sensitive regression models. *Appetite*, *129*, 252–261. https://doi.org/10.1016/j.appet.2018.06.030

Schnurr, P. P., & Green, B. L. (2004). Understanding relationships among trauma, posttraumatic stress disorder, and health outcomes. In *Trauma and health: Physical health consequences of exposure to extreme stress* (pp. 247–275). American Psychological Association. https://doi.org/10.1037/10723-010

Sechidis, K., Sperrin, M., Petherick, E. S., Luján, M., & Brown, G. (2017). Dealing with under-reported variables: An information theoretic solution. *International Journal of Approximate Reasoning*, *85*, 159–177. https://doi.org/10.1016/j.ijar.2017.04.002

Shuttlesworth, M. E., & Zotter, D. (2011). Disordered eating in African American and Caucasian women: The role of ethnic identity. *Journal of Black Studies*, *42*(6), 906–922. https://doi.org/10.1177/0021934710396368

Small, C., & Fuller, M. (Eds.). (2021). *Treating Black Women with Eating Disorders: A Clinician's Guide*. Routledge. https://doi.org/10.4324/9781003011743

Smolak, L., & Striegel-Moore, R. H. (2001). Challenging the myth of the golden girl: Ethnicity and eating disorders. In *Eating disorders: Innovative directions in research and practice* (pp. 111–132). American Psychological Association. https://doi.org/10.1037/10403-006

Sonneville, K. R., & Lipson, S. K. (2018). Disparities in eating disorder diagnosis and treatment according to weight status, race/ethnicity, socioeconomic background, and sex among college students. *International Journal of Eating Disorders*, *51*(6), 518–526. https://doi.org/10.1002/eat.22846

Stevens, G. A., Singh, G. M., Lu, Y., Danaei, G., Lin, J. K., Finucane, M. M., Bahalim, A. N., McIntire, R. K., Gutierrez, H. R., Cowan, M., Paciorek, C. J., Farzadfar, F., Riley, L., Ezzati, M. (2012). National, regional, and global trends in adult overweight and obesity prevalences. *Population Health Metrics*, *10*(1), 22. https://doi.org/10.1186/1478-7954-10-22

Stice, E. (1998). Modeling of eating pathology and social reinforcement of the thin-ideal predict onset of bulimic symptoms. *Behaviour Research and Therapy*, *36*, 931–944.

Stice, E., Schupak-Neuberg, E., Shaw, H. E., & Stein, R. I. (1994). Relation of media exposure to eating disorder symptomatology: An examination of mediating mechanisms. *Journal of Abnormal Psychology*, *103*(4), 836–840.

Striegel-Moore, R. H., Wilfley, D. E., Pike, K. M., Dohm, F. A., & Fairburn, C. G. (2000). Recurrent binge eating in Black American women. *Archives of Family Medicine*, *9*(1), 83–87.

Strings, S. (2019). *Fearing the black body: The racial origins of fat phobia*. New York University Press.

Sussman, N. M., Truong, N., & Lim, J. (2007). Who experiences "America the beautiful"?: Ethnicity moderating the effect of acculturation on body image and risks for eating disorders among immigrant women. *International Journal of Intercultural Relations, 31*(1), 29–49. https://doi.org/10.1016/J.IJINTREL.2006.03.003

Swanson, S. A., Crow, S. J., Grange, D. L., Swendsen, J., & Merikangas, K. R. (2011). Prevalence and correlates of eating disorders in adolescents: Results from the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry*, *68*(7), 714–723. https://doi.org/10.1001/archgenpsychiatry.2011.22

Swinbourne, J., Hunt, C., Abbott, M., Russell, J., St Clare, T., & Touyz, S. (2012). The comorbidity between eating disorders and anxiety disorders: Prevalence in an eating disorder sample and anxiety disorder sample. *Australian & New Zealand Journal of Psychiatry*, *46*(2), 118–131. https://doi.org/10.1177/0004867411432071

Taylor, J. Y., Caldwell, C. H., Baser, R. E., Faison, N., & Jackson, J. S. (2007). Prevalence of eating disorders among blacks in the national survey of American life. *International Journal of Eating Disorders*, *40*(S3), S10–S14. https://doi.org/10.1002/eat.20451

Tester, J. M., Lang, T. C., & Laraia, B. A. (2016). Disordered eating behaviours and food insecurity: A qualitative study about children with obesity in low-income households. *Obesity Research & Clinical Practice*, *10*(5), 544–552. https://doi.org/10.1016/j.orcp.2015.11.007

Thompson, B. (1996). Multiracial feminist theorizing about eating problems: Refusing to rank oppressions. *Eating Disorders*, *4*(2), 104–114. https://doi.org/10.1080/10640269608249178

Thompson, B. W. (1994). *A hunger so wide and so deep: American women speak out on eating problems*. U of Minnesota Press.

Thompson, J. K., & Stice, E. (2001). Thin-ideal internalization: Mounting evidence for a new risk factor for body-image disturbance and eating pathology. *Current Directions in Psychological Science*, *10*(5), 181–183. https://doi.org/10.1111/1467-8721.00144

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

Trent, M., Dooley, D. G., Dougé, J., Section On Adolescent Health, Council On Community Pediatrics, Committee On Adolescence, Cavanaugh, R. M., Jr, Lacroix, A. E., Fanburg, J., Rahmandar, M. H., Hornberger, L. L., Schneider, M. B., Yen, S., Chilton, L. A., Green, A. E., Dilley, K. J., Gutierrez, J. R., Duffee, J. H., Keane, V. A., … Wallace, S. B. (2019). The impact of racism on child and adolescent health. *Pediatrics*, *144*(2), e20191765. https://doi.org/10.1542/peds.2019-1765

Tyler, K. M., Stevens-Watkins, D., Burris, J. L., Fisher, S. D., & Hargons, C. N. (2022). Black psychology and whiteness: Toward a conceptual model of Black trauma through the prism of whiteness. *Journal of Black Psychology*, *48*(1), 5–42. https://doi.org/10.1177/00957984211034948

van Doorn, J., van den Bergh, D., Böhm, U., Dablander, F., Derks, K., Draws, T., Etz, A., Evans, N. J., Gronau, Q. F., Haaf, J. M., Hinne, M., Kucharský, Š., Ly, A., Marsman, M., Matzke, D., Gupta, A. R. K. N., Sarafoglou, A., Stefan, A., Voelkel, J. G., & Wagenmakers, E.-J. (2021). The JASP guidelines for conducting and reporting a Bayesian analysis. *Psychonomic Bulletin & Review*, *28*(3), 813–826. https://doi.org/10.3758/s13423-020-01798-5

Van Dyke, N., & Drinkwater, E. J. (2014). Relationships between intuitive eating and health indicators: Literature review. *Public Health Nutrition*, *17*(8), 1757–1766. https://doi.org/10.1017/S1368980013002139

Wade, T. D., Wilksch, S. M., & Lee, C. (2012). A longitudinal investigation of the impact of disordered eating on young women's quality of life. *Health Psychology*, *31*(3), 352–359. https://doi.org/10.1037/a0025956

Walsh, R., & Einstein, G. (2020). Transgender embodiment: A feminist, situated neuroscience perspective. *INSEP – Journal of the International Network for Sexual Ethics & Politics*, *3*(0). https://www.budrich-journals.de/index.php/insep/article/view/35951

Weaver, L. J., & Fasel, C. B. (2018). A systematic review of the literature on the relationships between chronic diseases and food insecurity. *Food and Nutrition Sciences*, *09*(05), Article 05. https://doi.org/10.4236/fns.2018.95040

Wilfred, S. A., & Lundgren, J. D. (2021). The Double Consciousness Body Image Scale: A body image assessment centering the experiences of Black women. *International Journal of Eating Disorders*, *54*(10), 1771–1781. https://doi.org/10.1002/eat.23581

Williams, D. R., González, H. M., Neighbors, H., Nesse, R., Abelson, J. M., Sweetman, J., & Jackson, J. S. (2007). Prevalence and distribution of major depressive disorder in African Americans, Caribbean Blacks, and Non-Hispanic Whites: Results from the National Survey of American Life. *Archives of General Psychiatry*, *64*(3), 305–315. https://doi.org/10.1001/archpsyc.64.3.305

Williams, D. R., & Rucker, T. D. (2000). Understanding and addressing racial disparities in health care. *Health Care Financing Review*, *21*(4), 75–90.

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

Yoon, C. Y., Mason, S. M., Loth, K., & Jacobs, D. R. (2022). Adverse childhood experiences and disordered eating among middle-aged adults: Findings from the coronary artery risk development in young adults study. *Preventive Medicine*, *162*, 107124. https://doi.org/10.1016/j.ypmed.2022.107124

Zelkowitz, R. L., Zerubavel, N., Zucker, N. L., & Copeland, W. E. (2021). Longitudinal associations of trauma exposure with disordered eating: Lessons from the Great Smoky Mountains Study. *Eating Disorders*, *29*(3), 208–225. https://doi.org/10.1080/10640266.2021.1921326

Zucker, T., & Pollack, D. (2021). Are clients being improperly denied coverage for an eating disorder when in a residential treatment center? *Smith College Studies in Social Work*, *91*(2), 75–84. https://doi.org/10.1080/00377317.2021.1873895