

AN EXPLORATION OF DISORDERED EATING AND EXERCISE BEHAVIORS,
RISK FACTORS, AND INTERSECTIONAL MINORITY STRESS
IN QUEER MEN OF COLOR

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Dissertation Prepared for the Degree of
DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

August 2021

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Pereira, Andrew G. *An Exploration of Disordered Eating and Exercise Behaviors, Risk Factors, and Intersectional Minority Stress in Queer Men of Color*. Doctor of Philosophy (Counseling Psychology), August 2021, 101 pp., 11 tables, 6 figures, 7 appendices, references, 183 titles.

Although the prevalence of disordered eating and exercise behaviors (DE/EBs) among queer men of color (Q-BIPOC) is higher than their heterosexual and white sexual minority peers, little is known about the mechanisms behind these differences. We evaluated a series of hypotheses to test DE/EB models on a sample of 78 Q-BIPOC men, who were recruited online during the COVID-19 pandemic and given a questionnaire measuring DE/EBs, body dissatisfaction, depression, mesomorphic ideal internalization, gender role conflict, and distress from intra-community racism and heterosexism. Results show that Q-BIPOC men reported high rates of emotional and binge eating, restrictive eating behaviors, supplement/diet pill use, and depression symptoms. Gender role conflict and intra-community racism/heterosexism are positively associated with emotional and binge eating, with gender role conflict holding unique predictive contribution as other variables of interest were held constant. Fat and muscle dissatisfaction were the strongest predictors of DE/EBs, mediating the effects of both mesomorphic ideal and depression. Results support the tripartite influence and dual pathway models for our sample, with mixed support for intersectional minority stress and affect regulation. Clinicians are cautioned to carefully assess Q-BIPOC men for eating disorders, given high rates of critical behaviors in the current sample. Researchers are also encouraged to incorporate intersectional resilience into DE/EB studies for Q-BIPOC men. Our findings point to the importance of intersectional measurement and investigation of clinical phenomenon; however, key constructs are also discussed in the context of the COVID-19 global pandemic.

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By

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ACKNOWLEDGEMENTS

First, I would like to acknowledge my major professor, Trish. You have been an inspiration to me, and I am grateful for your mentorship and support throughout the years. I want you to know that I trust you, I care about you and your family, and I will always remember how you have been there for me during the challenges I have faced. I am proud to continue your line of scholarly lineage.

To my mom, you have been a source of comfort and solidarity all my life. You taught me safety, warmth, my value, and have been a guiding, grounding light. Tommy, my forest dwelling spirit guide, I could never ask for a better brother. You always seem to know what to say, just by being you. My aunt, whose creativity and generous spirit led me through uncertain times. Finally, my partner, Bo, you have been my rock, and I love you to the moon and back. What would I have done without you in my life and Bella there snuggling me?

My friends and colleagues, my chosen family, you mean the world to me. Nina, together we did it, and I will never forget your encouragement. Scott, my invaluable one-man cheerleader battalion, mentor, and supervisor. You believed in me even when I had lost hope. Chris, your discerning and expert eye, your friendship, means so much to me. To the rest of my gaymer community and friends, my LGBT family, my allies, and my BIPOC warriors, continue the fight, be strong, and thank you for showing me the way.

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CHAPTER 1

INTRODUCTION

This study examined disordered eating and exercise behaviors (DE/EB) among queer men who are also black, indigenous, or people of color (Q-BIPOC). Studies on this subject are of interest to clinicians and researchers, given the dearth of literature examining DE/EB within identity intersections. To highlight this, Miller and Luk (2018) recently conducted a meta-analysis which revealed noticeable disparities among young sexual minority men, who exhibited higher rates of bingeing, purging, restrictive dieting, diet pill usage, and lower body image than their heterosexual peers. In the studies analyzed, however, they suggest that differences within ethnic minority and sexual minority men could not be fully examined, due to predominantly white samples. Similarly, another study examining DE/EB correlates contained a sample of 7,843 young men, with 94% of their sample identifying as white (Calzo et al., 2015). These studies are an example of a longstanding pattern within psychological literature, whereby white individuals are studied extensively, and other ethnic identities are compared against the “white standard” (Jones, 1993; Graham, 1992; Guthrie, 2004; Mio, Barker, & Rodriguez, 2016).

Similarly, studies tend to focus on either predominantly white heterosexual samples, or predominantly white and queer samples. Racial disparities constitute one axis of oppression but working within a single-axis frame does not capture the full experience of those with multiple marginalized identities. One explanation for why we might see differences in experience due to overlapping identities is the theory of intersectionality. Kimberlee Crenshaw, who is often credited with coining the term “intersectionality,” published her scholarly work exploring the marginalization of black women in the legal system (Crenshaw, 1989 p. 140). The theory underscores our need to consider multiple levels of identity at once— instead of single axis

conceptualization— to fully understand the specific type of marginalization individuals may face when living under multiple marginalized identities. Following this theoretical lens, when multiple marginalized identities overlap, an individual's lived experiences may lead to psychological outcomes that are unlike those that have been described based on white samples or samples sharing just one marginalized identity. An example of the psychological impact of intersectional investigation, for male disordered eating and exercise behaviors, is evident in a study exploring ethnic and sexual minority differences in a sample of Southern U.S college men (Pereira et al., in progress). The study highlights the exacerbating effect of living as a Black American gay or bisexual man, which moderates the relationship between negative affect and emotional/binge eating. Findings such as these point to the potential for unexamined mechanisms in the disordered eating and exercise behaviors of Q-BIPOC men which have yet to be discovered.

The current study relies on three interrelated theories as a basis for quantitative investigation (see Figure 1): intersectionality (Crenshaw, 1989), minority stress (Meyer, 2003), and affect regulation (Polivy & Herman, 1993). Using this conceptual frame, we can direct our *attention* as researchers towards factors that may be important to consider within overlapping marginalized identities, the potential *impact* of unique minority stress Q-BIPOC men may face, and how overlapping identities alter the *expression* of those symptoms and behaviors. These three theories combine into an intersectional stress and regulation conceptual framework that provides the structure for the current study (see Figure 1).

What follows is a review of the literature on salient DE/EBs as they relate to sexual minority men, ethnic minority men, as well as Q-BIPOC men. Given that the current study is concerned with the intersection of three identities—sexual minority, ethnic minority, and male

gender identity--wherever possible the reviewed literature will be kept within those intersections. There are two barriers to this goal: 1) the male DE/EB literature is limited (Murray et al. 2017), and 2) identity variables are typically ancillary (Calzo et. al., 2015). Another aim of the literature review is to summarize seminal works within DE/EB literature, which at times may rely on the “white standard” and ancillary, single axis identity variables. It will be important to examine these works while considering the possibility that their findings may only be partially applicable to the intersectional population of focus in the current study. Please refer to Appendix A for an expanded and more detailed review of the literature.

1.1 Disordered Eating and Exercise Behaviors (DE/EB) in Men

The National Institute of Mental Health prevalence estimates show that nearly a third of binge eating disorder, 25% of anorexia nervosa, and 16% of bulimia nervosa cases from 2001-2003 were men (NIMH, 2017; Hudson et al., 2007). Despite these sizable rates, which are likely underestimated due to male underutilization of mental health treatment (Thapliyal et al., 2018; Mackenzie et al., 2006), treatment specificity for male disordered eating is currently lacking (Kinnaird et al., 2018; Thapliyal & Hay, 2014). Furthermore, data show that men, particularly male athletes, are more likely to report subclinical disordered eating behaviors than women (Chatterton, 2012). Given likely under-reporting of male symptomology and the various associations seen in subclinical male DE/EB (Olivardia et al., 2004; Olivardia et al., 1995), subclinical male disordered eating and exercise behaviors are an important area of intervention and investigation.

Young Q-BIPOC men are at particular risk of drive for thinness and binge eating, with 19 and 20-year-olds reporting higher rates of dieting, purging, and binging than their heterosexual peers (Austin, 2013; Calzo et al., 2015; Kaminski et al., 2005; Russell, & Keel, 2002). Along

with dieting and emotional eating, gay adult men report more fear of becoming fat than heterosexuals (Kaminski et al., 2005), indicating that weight and body shape concerns are more salient for gay men. Anorexia nervosa and bulimia prevalence rates are higher for ethnic minority adult gay and bisexual men, with elevated prevalence for black and Latino gay and bisexual men in comparison to white gay and bisexual men (Feldman & Meyer, 2010). Taken together, queer men appear to be at higher risk for thinness behaviors, with growing evidence that Q-BIPOC men may exhibit rates higher than their already elevated SM peers. More recent literature highlights the increased rates of disordered eating behaviors in sexual minority Hispanic men (Gonzales IV & Blashill, 2021), although overall the rates of DE/EBs were higher than previously thought for sexual minority men regardless of ethnicity.

While robust exercise behavior is generally considered a marker of health in adults (Rao, 2019), some forms of exercise are also associated with maladaptive coping and dependence patterns (Berczik et al., 2014). Over-exercise behaviors among gay men appear to be similar to heterosexuals' (Kaminski et al., 2005), but do not appear to be significantly predicted for African American men using traditional risk factors, such as body dissatisfaction, body ideal internalization, self-esteem, and negative affect (Pereira et al., in progress). Evidence exists, however, for higher amounts of compulsive exercise among men who also report higher binge eating (Kelly et al., 2015). Although over-exercise is positively associated to both thinness behaviors and emotional and binge eating, it has not been related to appearance internalization in gay men (Pereira et al., in progress). In a theoretical conceptualization of exercise addiction, Egorov and Szabo (2013, pg. 205) identify a maladaptive coping pathway in response to intolerable stress that helps to explain over-exercise behaviors (see Figure 2). Overall, disordered eating and exercise behaviors appear to be both problematic and not well understood for Q-

BIPOC men, highlighting the need for specific population studies.

1.2 Traditional Predictors of DE/EB

Body dissatisfaction is a crucial factor in a variety of theories used to explain risk factors associated with DE/EB (Pennesi & Wade, 2016). Regarding ethnic minority men, body dissatisfaction is uniquely associated with a drive for thinness, emotional eating, and binge eating (but not over-exercise), among African American and Latino undergraduates (Pereira et al., in progress). Tylka and colleagues discovered that to account for the complexities of body dissatisfaction in men, it may be necessary to conceptualize the internalization of leanness ideals and muscular ideal separately in the prediction of body dissatisfaction for men (Tylka, 2011) and gay men (Tylka, & Andorka, 2012). Men also suffer from unique dissatisfaction with their musculature, ranging from muscle size dissatisfaction to a more clinically significant phenomenon called muscle dysmorphia (McFarland & Kaminski, 2009; Longobardi et al., 2017; Olivardia et al., 1995). For SM men, body dissatisfaction appears to be highly prevalent (Yelland & Tiggemann, 2003; French, 1996) and uniquely measured (Elosua & Hermosilla, 2013; Smith et al., 2011). Researchers who have accommodated this literature by operationalizing body dissatisfaction as both muscle and body fat dissatisfaction, have found robust associations between male body dissatisfaction and DE/EB (McFarland & Kaminski, 2009; Kaminski et al., 2005; Tylka, 2011). Researchers have also found comorbidity between depression and eating disorders (Green et al., 2009; Grilo et al., 2009), which has been replicated for queer men and women (Feldman, & Meyer, 2010), Hispanic gay men (De Santis, 2012; Pereira et al., in progress), and African American men (Pereira et al., in progress).

Two theories explain why there may be associations between depression and eating disorders. The tripartite influence model posits that internalization of societal standards of

appearance, such as pressures to be thin or muscular, lead to feelings of depression, body dissatisfaction, and, ultimately, disordered eating (Thompson et al., 1999; Yamamiya et al., 2008), and it has been replicated for sexual minority men (Convertino et al., 2021). In an expansion of the tripartite influence model for men (Tylka, 2011) and gay men (Tylka, & Andorka, 2012), research by Tylka and colleagues support a dual pathway model for body ideal internalization of thinness and muscularity, highlighting the importance of appearance pressure internalization on disordered eating and muscle enhancing behaviors (Tylka, & Andorka, 2012; Tylka, 2011). Although body dissatisfaction, depression, and appearance internalization are related to DE/EB, these associations have been studied primarily in white samples. To accurately apply our conceptual frame to existing theories and models of DE/EB for Q-BIPOC men, it is also necessary to examine other unique sources of negative affect that Q-BIPOC men may face, and consider whether those sources might be related to maladaptive coping.

1.3 Minority Stress Predictors

Researchers conceptualize masculinity as a driving force of in the lives of gay men, which may also contribute to masculinized standards of beauty (De Visser et al., 2009; Sánchez et al., 2009) experienced in dating profiles (Eguchi, 2006; 2009) and the media (Giaccardi et al., 2016). Masculinity is also associated positively with measures of internalized homophobia (Thepsourinthone, 2017), a construct derived from the damaging internalization of heterosexist and maladaptive masculine norms prevalent in society (for a review see Szymanski et al., 2008). Although the literature is scant, some data links the construct to body image issues (Kimmel & Mahalik, 2005). General body image dissatisfaction for heterosexual men, in contrast, does seem to be related to masculine gender norms (Butchko, 2016). Gender role conflict is conceptualized as hegemonic masculinized behaviors and attitudes, which can result in distress in a variety of

settings (O'Neil, 2008) and has been replicated for SM men (Szymanski & Carr, 2008). The construct may operate differently for Q-BIPOC men, as suggested by restricted affection mediating the relationships of racism and heterosexism on psychological distress in Latino and Asian MSM (Bishop, 2014). To better understand why this may be the case, and to clarify the distress from masculine gender role conflict in Q-BIPOC men, it is necessary to account for distress related to heterosexism as well.

The term heterosexism represents the realities resulting from bias and stigma non-heterosexual individuals may face in their daily lives (Meyer, 2003; Mio et al., 2012; Smith et al., 2012). The effects of heterosexism can include alienation (Flowers & Buston, 2001), parental abandonment and resulting homelessness for LGBT youth (Judge, 2015), homonegative attitudes among social workers and other professionals (Berkman & Zinberg, 1997), housing discrimination, verbal and physical assault, property-based hate crimes (i.e., homophobic graffiti, theft, property destruction), and employment discrimination (Herek, 2009). As many as 72% of adult SM men report victimization in the past 6 months (Martin & Alessi, 2012), and reports of heterosexism have been linked to psychological distress (Balsam et al., 2011), trauma (Alessi et al., 2013), and internalization of heterosexism (Berg et al., 2016; Szymanski et al., 2008). Intra-ethnic differences in the attitudes and perceptions towards Q-BIPOC men have been noted as an absence of positivity (Whitley et al., 2011), with a growing amount of black communities supporting equal rights for LGBT people (Lewis, 2003). In contrast, LGBTQ Asian American participants reported more heterosexism in communities of color than in other communities (Szymanski & Sung, 2010). These paradoxical finding points to the possibility that although communities of color hold negative attitudes and beliefs towards SM men, they are less likely to advance those prejudices into discriminatory behaviors. This leads us to consider whether the

impact of heterosexism is different for Q-BIPOC men than for white SM men. To understand why this may be the case, we must also consider racism.

Multicultural psychologists conceptualize racism as systemic, historical, and institutionalized behaviors and attitudes that are directed towards minority communities based on perceived race-based biological and cultural differences (Jones, 2000; Mio et al., 2012). Over time, covert forms of racism are more common (Mio et al., 2012) and result in a variety of negative effects (Paradies, 2015; Pieterse et al., 2010; Torres et al., 2012; for a review on physiological health see Paradies, 2006; Paradies et al., 2015; for a review on psychological health see Williams & Mohammed, 2009), including racial hate crime linked to traumatic stress (Bryant-Davis & Ocampo, 2005; Carter, 2007), racism within health care to mistreatment of black patients who experience pain (Hoffman et al., 2016), and negative racial climate in college with post-traumatic stress symptoms for black and Asian students (Pieterse et al., 2010). It is also important to note that not all racism is overt or even obvious, and should instead be conceptualized as daily racial hassles, assumptions, and messages from others in the form of microaggressions (Mio et al., 2012; Sue et al., 2007). Experiencing racism has also been linked to symptoms of depression (Lowe et al., 2019; Schmitt et al., 2014; Torres & Vallejo, 2015; Wei et al., 2010), psychological distress in black men (Pieterse & Carter, 2007), Latinx adults (Chavez-Korell, & Torres, 2014), and Asian students (Gee et al., 2007; Wei et al., 2008). For Q-BIPOC men, racism can also manifest in the LGBT community and in the process of dating other men (Ghabrial, 2017; Balsam et al., 2011; Kudler, 2007). Q-BIPOC men may thus feel that they do not completely belong to either a racial or queer group, resulting in coping deficits (Chavez-Korell & Torres, 2014; Finch & Vega, 2003). As such, it may be possible that although communities of color express heterosexism inconsistently (or with reservation) in comparison to

white communities, the impact is felt more deeply for Q-BIPOC men when it does take place. Coping deficits for these two overlapping stressors may explain the elevated rates of DE/EB in sexual and ethnic minority adolescents (Austin, 2013). The link between Q-BIPOC men and gender role conflict, heterosexism, and racism with DE/EB has not been empirically investigated to date, despite the theoretical and conceptual evidence pointing to its importance. As a result, the current study is a significant contribution to the budding field of intersectionality research and clinical practice.

1.4 Purpose

Although intersectional research is still in its infancy, sparse, and at times inconsistent, salient reviewed research points toward a potentially vibrant field of study. Introduction of intersectional measures for the unique stressors of sexual minority people of color (e.g., Balsam, Molina, Beadnell, Simoni, & Walters, 2011) has opened new avenues of investigation. The current study has two general objectives: 1) investigate racial differences in the prediction of DE/EBs within Q-BIPOC men, and 2) explore the extent to which overlapping marginalized stressors are an important consideration when assessing maladaptive coping strategies, such as DE/EBs. While our conceptual framework is being used specifically to examine DE/EB, a larger aim in this study is to apply intersectionality framework to psychological outcome literature.

1.5 Hypotheses

1a. The tripartite model observed in predominantly white and heterosexual samples is useful in explaining the disordered eating seen in Q-BIPOC men. Specifically, body fat dissatisfaction and depression will mediate the relationship between mesomorphic ideal-internalization and disordered eating (Drive for Thinness, Emotional and Binge Eating) in sexual minority men of color.

1b. To test the tripartite model for over-exercise behaviors in Q-BIPOC men, muscle dissatisfaction and depression will mediate the relationship between mesomorphic ideal-internalization and over exercise behaviors.

2. Q-BIPOC men's unique minority stress variables will be associated with disordered eating and exercise behaviors. Specifically, gender role conflict, heterosexism distress and racism distress (racism within SM communities) are positively associated with disordered eating and exercise behaviors (Drive for Thinness, Emotional and Binge Eating, Over Exercise).

3. To what extent are unique minority stress variables useful in predicting disordered eating and exercise behavior in Q-BIPOC men? We hypothesize that gender role conflict, heterosexism distress, and racism distress account for a significant amount of variance in disordered eating and exercise behaviors (Drive for Thinness, Emotional and Binge Eating, Over Exercise), while holding traditional predictors (Body Dissatisfaction, Fat/Muscle Dissatisfaction, Depression, and Mesomorphic Ideal Internalization) constant.

4. To test whether overlapping sources of minority stress predict disordered eating and exercise behaviors, we hypothesize that racism distress moderates the relationships between heterosexism distress and DE/EBs (Drive for Thinness, Emotional and Binge Eating, Over Exercise), while holding other variables of interest (Body Dissatisfaction, Fat/Muscle Dissatisfaction, Depression, and Mesomorphic Ideal Internalization) constant.

CHAPTER 2

METHODS

2.1 Participants

Our final sample of 78 participants identified as Q-BIPOC, over the age of 18, residing in the US, cis-male, and were primarily recruited online through social media advertisements and snowball sampling. The following sections will detail recruitment efforts and barriers experienced while obtaining this sample, to help future intersectional researchers improve upon our methodologies in studies examining a difficult to reach populations.

2.2 Recruitment

After obtaining IRB approval (see Appendix B), participants were recruited between August 2020 and April 2021, through advertisements on two popular social media applications. The online advertisements were viewed by approximately 43.2k men between the ages of 18-65+ who were interested in the keywords “LGBT Community,” “Queer Studies,” and “LGBT Pride.” A total of 9,679 men engaged with the advertisement in some manner, such as through clicking on the image (see Appendix C), commenting, sharing, or reacting. A total of 820 men clicked on the survey link to be taken to the screening questionnaire. We also separately used snowball sampling methodology by providing a link for identified participants and organizations to forward to friends or acquaintances. The number of snowball sampling individuals who were contacted directly was 112, either through email, text, or direct messaging on social media.

Prior to invitation into the main study, potential participants were asked to complete a screening demographic questionnaire (see Appendix D) using the online survey webservice Qualtrics (<https://www.qualtrics.com>). Inclusionary criteria were that potential participants must be 18 years old or over, fluent in English, reside primarily in the U.S., self-identify as a cisgender

man, not strictly heterosexual, and reported at least one ethnic identity that was not white. Participants who identified as one or more ethnic identity in addition to white were placed into the non-white grouping for the purpose of recruitment and data analysis.

Three methods were used to protect against potential participant misrepresentation of identity designed to enter the study illegitimately, given concerns for trolling behavior and compensation motives. The screening questionnaire could only be completed by potential participants using a novel IP address: this prevented individuals who were previously excluded from attempting to enter the study by choosing different answers to screening questions. Second, exclusion from the study only took place after completion of all screening questions, to obfuscate which items excluded a potential participant from the study. Finally, two distractor questions were added to the screening measure (i.e., education level and household income) to further obfuscate eligibility items.

Although we included exclusion criteria which considered participant report of a non-heterosexual sexual orientation (i.e., not strictly heterosexual, asexual, pansexual) using a measure loosely derived from the Kinsey Scale (Kinsey et al., 2003), such a screening method might exclude participants who identify as strictly heterosexual but also have sexual partners of the same sex. A total of 322 participants completed the screening questionnaire, leading to the final sample size of 78. Using G-Power 3.1.9.4, a priori power analysis was completed using a moderate predicted effect size ($f^2 = .25$) and 8 predictors for multiple linear regression (Faul, Erdfelder, Buchner, & Lang, 2009). Results of the power analysis recommended that the required sample size needed for an 80% chance to detect an effect, if an effect exists, is $N = 58$.

2.3 Recruitment Cost and Barriers

The total cost of advertisements for the study was \$738.46 US dollars. Combined with

the three \$100 US dollar drawings, the study total cost was \$1038.46 US dollars for a final completed sample size of 78 participants, or \$13.15 US dollars per participant. Several factors may have impacted the cost of acquisition per participant. First, the advertisement algorithm used to show the recruitment materials to potential participants relied on engagements to guide effectiveness, and this appeared to work against our aims. During active recruitment, researchers viewed several negative comments and reactions by individuals each day, that were characterized as homonegative and aggressive. To avoid potential participants from being emotionally triggered by said material and biasing the data, the researchers actively removed and blocked engagements that were offensive. Given the algorithm considers any engagement to be predictive of success, those individuals may have guided the algorithm away from our targeted population and may have contributed to the high number of potential participants from needing to be screened out.

Additionally, the social media platforms used for the current study did not allow targeted advertisements based on ethnicity/race, given the claimed history of advertiser discrimination by not advertising their services to racial minorities (personal communication, 2021). They also banned advertisements using spelled out diversity words, such as “gay,” “queer,” or “Black” for the same discrimination reasons. As such, advertisements were required to use the abbreviated acronym Q-BIPOC to not be banned from the platforms (2021). This constraint may have also caused unnecessary and costly increases to the number of participants who clicked the advertisement to take the screening survey, as individuals reported being unclear of inclusion criteria after viewing the advertisement image which included the terms “Q-BIPOC” and “cis-men,” several of which stated so through offensive comments on the advertisement.

Finally, several potential participants recruited through both snowball sampling and

advertisement engagement reported that the COVID-19 global pandemic conditions caused them to be digitally fatigued and less enthusiastic about completing the study. This potential barrier, along with others mentioned, may have contributed to the large number of individuals who either qualified for the study and did not complete it or did not complete the survey in its entirety.

2.4 Procedure

Following recruitment and screening, participants were invited to complete the study online were presented with an IRB-approved informed consent (see Appendix E). The informed consent explained the purpose of the study, the expected time length to complete the study, the potential risks and benefits, researcher contact information for questions about the study, and an explanation that they could end their study participation at any time with no loss of benefits. Participants who provide informed consent were then randomly assigned to complete one of 6 counterbalanced sets of self-report questionnaires. All participants completed the same measures, but in different orders of presentation to minimize and test for order effects. A MANOVA tested whether questionnaire ordering predicted any variables of interest and was non-significant ($Wilks' \Lambda = .416, p = .303$). As such, questionnaire order was not included in further analysis.

After completion of the survey, researchers offered a debriefing statement and resource list to participants (see Appendix F), to provide support to participants who felt distress or motivated to seek services after answering survey questions. After debriefing, participants were asked if they would like to enter themselves or their favorite charity into a drawing for one of three \$100-prizes. Participants who opted into the drawing provided contact information for themselves or their chosen charity in a separate data set that was only accessed for the purpose of the drawing and then purged. This data was kept separately from the primary dataset.

Participants were asked to provide as much or as little information on the drawing survey as they preferred.

2.5 Measures

2.5.1 Demographics

Our survey contained a demographics questionnaire (see Appendix G) with items that captured basic demographics, such as gender identity, age, and relationship status. We also asked participants to estimate their weight and height using the U.S. units of pounds and feet/inches, to calculate body mass index (BMI; CDC, 2020). The information contained in the demographic questionnaire will be used to describe the sample and will not be included in the main analysis.

2.5.2 Male Drive for Thinness, Over Exercise, Emotional and Binge Eating, and Body Dissatisfaction

To measure male disordered eating and exercise behaviors, as well as male body dissatisfaction, this study used the Male Eating Behavior and Body Image Evaluation - 2 (MEBBIE-2; Kaminski & Caster, 1994; Kaminski et al., 2002; Kaminski et al., 2005). It is a 57-item self-report instrument created specifically for measurement in male samples, evaluating a variety of disordered eating and exercise constructs, as well as uniquely related constructs for men. Items range on a 6-point scale from 1 (*never/strongly disagree*) to 6 (*always/strongly agree*). There are seven theoretically and empirically derived scales, four of which will be used for the current study. The four scales which will be used are Drive for Thinness, Emotional and Binge Eating, Over Exercise, and Body Dissatisfaction. Eight items measured critical behaviors of DE/EBs, with positive endorsement indicating a potential eating disorder (e.g., “I make myself vomit as a way of trying to control my weight.”). These items were recoded to range from 0 (*never*) to 5 (*always*) and will be reported descriptively. Evidence for reliability of the

subscales have been observed in prior studies, as well as convergent validity with other disordered eating instruments (Kaminski et al., 2002) and measures which typically correlate with disordered eating and exercise behaviors in gay men (Pereira et al., in progress).

The Drive for Thinness (DT) scale of the MEBBIE-2 contains four items which evaluate feelings and behaviors focused specifically on reducing body fat to appear lean (e.g., “I wish I could be thinner”). The Emotional/Binge Eating scale (EBE) contains four items evaluating extent to which participants engage in overeating behaviors to cope with distress (e.g., “I tend to eat more when I’m sad”), along with a perception that they are unable to control their behavior (e.g., “I have lost control when I was eating”). Our last dependent variable, the Over-exercise (OE) scale contains eight items capturing preoccupation with exercise to reduce guilt and anxiety about body shape (e.g., “I’m afraid if I don’t exercise, I’ll get fat”). Internal consistency of DT ($\alpha = .77$), EBE ($\alpha = .85$), and OE ($\alpha = .79$) show it is appropriate for research purposes in our sample.

The Body Dissatisfaction (BD) scale contains 10 items which measure feelings of insecurity and negative preoccupation with one’s male body. A prior study observed adequate internal consistency of MEBBIE-2 scales in samples of African American ($\alpha = .73$ to $.83$) and Latino ($\alpha = .74$ to $.78$) men (Pereira, Kaminski, Parker, & Augustat, in progress). For the current study, the obtained internal consistency of the BD scale was adequate for use in research ($\alpha = .78$).

We separated items not included in the BD scale into two revised scales, to reflect fat dissatisfaction in one scale, and muscle dissatisfaction in the second scale, consistent with Tylka’s dual pathway model (Tylka, & Andorka, 2012). The Fat Dissatisfaction scale (FD) consisted of 3 items measuring the extent to which participants were dissatisfied with the amount

of fat on their bodies (e.g., “I wish I could lose weight.”). The obtained internal consistency of the FD scale was acceptable for use in research ($\alpha = .85$). The Muscle Dissatisfaction scale (MD) consisted of 5 items measuring the extent to which participants were dissatisfied with the amount of muscle on their bodies (e.g., “I exercise because I want my body to be more muscular.”). The observed internal consistency for the MD scale was acceptable for use in research ($\alpha = .75$). We tested the validity of the fat and muscle dissatisfaction scales by running a PCA including items from the BD, FD, and MD scales, to determine the extent to which three distinct scales could be extracted from the identified items. After visual examination of the scree plot and factor loadings, the data clearly showed that 2 components could be adequately extracted from the items, with one additional factor that contributed enough variance to be extracted. However, the additional factor contained negative factor loadings for all items and was thus discarded. We then re-computed the PCA using 2 fixed factors, and the pattern matrix using Oblimin rotation with Kaiser normalization revealed that the FD items loaded poorly with MD items, but each of the scales loaded well with the BD scale (see Table 1). These findings indicate that the FD and MD items are distinct from each other (discriminant validity) and appropriately related to the established BD scale (convergent validity).

2.5.3 Depression (DEP)

We used the Center for Epidemiological Studies Depression Scale, Revised (CESD-R; Eaton et al., 2004) to measure symptoms of depression in our sample. The CESD-R is a 20-item scale used to comprehensively evaluate depression along several different areas of symptomology, such as dysphoria, anhedonia, difficulty sleeping, difficulty with concentration, and feelings of worthlessness. Items range from 0 (*Not at all or less than one day*) to 4 (*Nearly every day for 2 weeks*), however for calculation of the scale score, responses 3 (*5-7 days*) and 4

(*Nearly every day for 2 weeks*) are treated as a score of 3. Total scores of the CESD-R range from 0 to 60, with scores over 16 indicating clinically relevant depression symptoms. Although over a decade of research has used the CESD-R both clinically and for research, few published studies have evaluated its validity with sexual minority men. One study of men who have sex with men (MSM) in a politically conservative region of the U.S. has shown the measure to be internally consistent (i.e., $\alpha = .92$) and appropriate for use in our demographic of study (Currin & Hubach, 2017). Ethnic minority research using the CESD-R has demonstrated excellent internal consistency (i.e., $\alpha = .95$) as well as associations with microaggressions in Asian-Americans (Choi, Lewis, Harwood, Mendenhall, & Hunt, 2017), with minority stress in a Latinx college sample (Jimenez, 2011), and racial discrimination and drinking in a black college sample (Desalu et al., 2019). Our sample demonstrated adequate internal consistency for the CESD-R for use in research ($\alpha = .92$).

2.5.4 Appearance Internalization

The Internalization scale from the Sociocultural Attitudes Towards Appearance Questionnaire – 4, Revised Male (SATAQ-4R-Male; Schaefer, Harriger, Heinberg, Soderberg & Thompson, 2017) is an 8-item measure consisting of items related to mesomorphic ideal appearance internalization (MESO), or how much an individual believes it is important to be both muscular and thin (e.g., “It is important for me to look muscular.” and “I think a lot about looking thin.”). The items range on a 5-point Likert scale from 1 (*definitely disagree*) to 5 (*definitely agree*). Scoring and interpretation instructions were provided directly by the author, and the development article which published reliability and validity findings for the body fat, muscularity, and general appearance internalization scales show it is adequate for research purposes with college men ($\alpha = .82$ to $.91$; 2017). To date, there is no research using the most

recent version of the SATAQ on Q-BIPOC men. Thus, conducted a PCA for 3 fixed factors to examine the scree plot and factor loadings of the combined MESO scale, and items appeared to load either onto muscularity ideal internalization items, thinness ideal internalization items, or items examining general appearance internalization (see Table 2). As such, the factor structure of the original scale appeared valid for use in our sample and the items were retained. The obtained internal consistency of the MESO scale show it is appropriate for research use in our sample ($\alpha = .76$).

2.5.5 Masculinity Distress

We used the Gender-Role Conflict Scale–Short Form (GRCS-SF; Wester, Vogel, O'Neil, & Danforth, 2012), a 16-item measure to evaluate psychological distress in the expression of masculinity. It is scaled on a 6-point Likert response ranging from 1 (*strongly disagree*) and 6 (*strongly agree*). The measure development of the GRCS-SF suggests a bi-factor solution, with one factor including all items and four subscales (Hammer, McDermott, Levant & McKelvey, 2018), measuring restrictive emotionality, success, power, and competition, restrictive affectionate behavior between men, and conflicts between work and family relations. Evidence for internal consistency ($\alpha = .77$ to $.86$) and validity have been demonstrated in samples of majority white heterosexual men (Hammer et al., 2018; Wester et al., 2012). Evidence for convergent validity have been established in a sample of gay men, where the subscales were all related to anger, depression, and anxiety (Simonsen et al., 2000), and in a sample of black gay men, where GRC was related to poor psychological well-being (Brown, 2020). We will use the combined score from each of the subscales, opting for the overall measure of gender role conflict which uses all 16 items (GRC). We conducted a PCA to consider whether GRC items loaded adequately onto scales. Evaluation of the scree plot identified a distinct “elbow” following the

first factor, suggesting the overall measure of GRC is appropriate for our sample. When a single factor PCA was conducted, however, item four (i.e., “Men who touch other men make me uncomfortable.”) loaded poorly (.18). With that item removed, we conducted PCA a final time and all items loaded adequately (.39 to .80) onto GRC. The obtained internal consistency of the GRC was adequate for research use in our sample ($\alpha = .86$).

2.5.6 Racism and Heterosexism Distress

This study used the LGBT People of Color Microaggression Scale (LGBT-PCMS; Balsam et al., 2011) to assess unique intersectional distress across a variety of ethnicities, including biracial, and multiracial participants. The scale consists of 18 items, with responses ranging from 0 (*Did not happen/not applicable to me*) to 5 (*It happened, and it bothered me EXTREMELY*). The LGBT-PCMS is divided into three scales, the Racism Distress scale (RD), measuring distress from racial microaggressions within the LGBT community, the Heterosexism Distress scale (HD) measuring distress from microaggressions related to heteronormative beliefs within communities of color, and the Relationship Racism Distress scale (RRD), measuring distress from racial microaggressions in the context of LGBT relationships.

The original measure was designed to measure and code both the distress and occurrence of scale constructs. The current study, however, only used the distress coding procedure, thus combining the 0 (*Did not happen/not applicable to me*) item responses with the 1 (*It happened, and it bothered me NOT AT ALL*) item responses. This coding procedure is designed to treat individuals who did not experience an event and those who did experience it and did not experience distress the same. The coding procedure which combines 1-5 ratings into dichotomous scores, along with those responding as 0, to tabulate the occurrence of microaggressions will not be used. The measure has been shown to be internally consistent in a

diverse sample of LGBT people of color ($\alpha = .81$ to $.92$), as well as exhibiting patterns of both construct and criterion-related validities (Balsam et al., 2011; for a review see Fisher et al., 2018). For the current study, the RD ($\alpha = .86$), HD ($\alpha = .79$), and RRD ($\alpha = .78$) scales demonstrated adequate internal consistency for research purposes.

CHAPTER 3

RESULTS

3.1 Data Preparation

3.1.1 Missing Data

Of the 155 participants who completed the main questionnaire, 79 participants did so completely. A total of 76 of the 155 participants were missing some, most, or all the data. Eleven of these 76 participants, however, answered enough of the data to be analyzed using Little's MCAR test. Results indicated that the data were missing completely at random ($Chi-Squared = 282.16, p = .237$) and were thus appropriate for multiple imputations. Data were imputed post data cleaning and scale computations, using 20 iterations and modeled using all available data within observed ranges. The resulting iterations were then tested using pooled data in subsequent analysis. The pooled results did not differ noticeably in univariates, bivariate, or HMR modeling or effects. Although pooled multiple imputation data is helpful to increase the accuracy of point estimates, reduce error, and increase power (Little & Rubin, 2019), doing so would render mediational analyses using bootstrapping significance testing unusable given technical limitations. To avoid problems with analyzing hypotheses with different sets of data, the original data were retained, and the imputed and incomplete data were discarded from further analysis.

3.1.2 Analytic Procedure

Data preparation consisted of deletion of cases with majority missing data, reverse scoring of items, removal of individuals completing the survey too quickly to be valid, and likely carelessly, as well as calculation of summary variables. Based on the estimated time of 12 minutes to both read and respond to questions, using timed mock trials with research assistants, only 1 participant was removed during data cleaning for completing the survey too quickly and

with all answers as neutral. Thus, the final sample size was 78.

The main analysis for hypothesis testing used hierarchical multiple regression (HMR). Prior to conducting the main analysis, we checked assumptions to consider whether the obtained data was appropriate for analysis. We tested multivariate normality through examination of Mahalanobis distance values, with values above or below 3 standard deviations treated as an outlier. None were identified in the sample. We tested linearity and homoscedasticity using visual examination of standardized residual/predicted value plots. Further visual examination of histograms, skewness and kurtosis values, and q-q plots were used to consider whether violations of normality prevent the use of HMR. To check for the last assumption of multicollinearity, tolerance and variance inflation factors were checked for any values above 2.5, but none were found. We also summarized and examined univariate data, and ran a MANOVA to check whether significant differences in the variables of interest are predicted by ethnicity (*Wilks' Lambda* = .409, $p = .664$) and relationship status (*Wilks' Lambda* = .616, $p = .891$). The findings were not significant and thus both ethnicity and relationship status were not needed in the main analyses as covariates. All assumptions appeared to be adequately met for statistical analysis.

We also evaluated demographic and descriptive data, to fully examine the obtained data and whether deviant demographic data exists (i.e. improper entering of age or income). Responses to the income item revealed that some participants may have entered their yearly income instead of their monthly, as several values were larger than \$30,000. As such, we removed income from further analysis and reporting. Given the inclusion of additional variables into the main analysis may reduce our desired power to detect an effect, we considered any Cronbach's alpha value below .70 as too unreliable for analysis. After examination of scales and obtained internal consistency values, this concern appeared unwarranted, and we used all

variables of interest in the analyses. Furthermore, given the intersectional nature of the current study, principal component analysis (PCA) of measures without adequate validity literature were used to validate whether the measure items loaded onto factors as intended. PCA's appeared to be more appropriate than exploratory factor analysis, given that the current study was not intended to confirm any latent structure of observed variables for the purpose of psychometric development or evaluation of scales. Furthermore, all items were developed by researchers to directly evaluate identified constructs. Finally, we created one interaction term using the product of the calculated and standardized RD and HD scales.

Given the exploratory nature of the current study, data were analyzed without multiplicity adjustment (Bender & Lange, 1999; Perneger, 1998; Rothman, 1990), and findings will be interpreted as hypothesis generating and requiring replication. Despite the controversy of this practice, we concluded this was appropriate for several reasons specific to our research purposes. Inflating Type-II error rates with overly conservative adjustments, such as Bonferroni, would likely render interesting effects non-significant for the mis-guided purpose of universal commentary about said effects. We view many psychological constructs, particularly racism and heterosexism, as fluid across time. As such, universal statements about our population of interest that may be cited for years into the future is not within the scope of what we hope to achieve. Furthermore, our sample will be a cross-sectional glimpse of our variables of interest during the covid-19 pandemic, a unique experience that necessitates description and not inference (Amrhein et al., 2019). We also find the notion that a small subset of Q-BIPOC men, who are in a position of power to be recruited and reported in our sample, would somehow universally represent the larger population of Q-BIPOC men as similar to the concept of tokenism (Niemann, 2016). Although the assumption of “generalizability” is a widely accepted tradition in quantitative

research designs, it does not seem as appropriate within intersectional research. Instead, we feel that description, instead of generalizability, is a more appropriate frame for intersectional quantitative investigation, such as the case for qualitative work. As such, we will use unadjusted p-values as a tool for description of our sample, not for the purpose of statistical inference. If studied effects are not significant after Bonferroni adjustment, our reporting will briefly highlight this to aid researchers in their interpretive preference only.

Following cleaning of data, computing of scales, testing of assumptions, and analyzing the need for covariates, we conducted the main analysis. We then tested the data in three phases. Phase one tested for hypothesis 1a and consisted of mediational analysis using PROCESS version 3.5.3, model 6, for SPSS build 1.0.0.1447 (Hayes 2018; 2017), testing for the direct and indirect effects of MESO and disordered eating (Drive for Thinness, Emotional and Binge Eating) through the FD and DEP. We then tested hypothesis 1b with the same software and testing for the direct and indirect effects of MESO and OE through the MD and DEP scales. Figure 3 illustrates the model that was tested for hypotheses 1a and 1b. Significance testing used a 5,000 bootstrap sampling procedure, where direct and indirect effects are calculated for 95% confidence intervals at the 2.5th and 97.5th levels, with upper and lower limits that do not include zero indicating significance.

Phase 2 tested Hypothesis 2 through examination of two-tailed bivariate Pearson correlations between unique minority stressors (Gender Role Conflict, Heterosexism Distress, Racism Distress, and Relationship Racism Distress) and our variables of interest. We used a two-tailed test for all correlations and confidence intervals, given the nature of our measured minority stress variables' relation to other variables of interest is not adequately examined in extant literature. Phase 3 tested Hypotheses 3 and 4 using hierarchical multiple regression (HMR). In

the first block, traditional predictors (Body Dissatisfaction, Fat/Muscle Dissatisfaction, Depression, and Mesomorphic Ideal Internalization) were entered as independent variables, and DE/EB (Drive for Thinness, Emotional and Binge Eating, Over-Exercise) were entered as dependent variables. The second block included the addition of unique minority stressors (Gender Role Conflict, Heterosexism, Racism Distress, and Relationship Racism Distress), if they were significantly correlated during phase two, with ΔR^2 indicating the result of Hypothesis 3. The third block included the interaction variable (HD and RD), resulting in interaction plots of significant effects, thus testing Hypothesis 4.

3.2 Univariate Statistics

3.2.1 Sample Descriptive Statistics

As depicted in Table 3, the sample invited to participate in the main study identified predominantly as strictly gay (49.4%, $n = 77$), second to participants who identified as a combination of gay and heterosexual (37.7%, $n = 54$). No individuals who identified as strictly heterosexual were invited to participate, as they were excluded in the screening questionnaire. The final sample after removing missing data was 78, and they predominantly identified their ethnicity as 14.1% Black ($n = 11$), 30.8% Latinx ($n = 24$), 23.1% Asian ($n = 18$), and 21.8% Bi-Ethnic or Multi-Ethnic ($n = 17$), as depicted in Table 4. Frequencies of relationship status reveal a notable 56.4% representation of Q-BIPOC men who identified as single and not dating ($n = 44$), with 42.3% who identified as currently being in some form of romantic relationship ($n = 33$). On average, participants identified as in their mid-20's ($M = 27.4$, $SD = 7.8$), with six participants over the age of 40. Regarding BMI, 37.2% identified their weight and height within the healthy range ($n = 29$), with 57.7 % within the overweight or obese ranges. Two participants identified within the underweight range (2.6%). On average, participants identified within the

high end of overweight ($M = 29.7$, $SD = 10.2$), with two participants reporting over 3 standard deviations of the average sample BMI. Regarding the critical items, 20.5% reported diet pill usage ($n = 16$), 82.1% skipping meals ($n = 64$), 9% vomiting ($n = 7$), 66.7% fasting ($n = 52$), 50% reported an eating cheat day ($n = 39$), 47.4% eating till “spaced out” or numb ($n = 37$), 65.4% uncontrollable eating ($n = 51$), and 44.9% using muscle-building supplements ($n = 35$). A total of 93.6% participants endorsed DE/EB critical items.

3.2.2 Scale Descriptive Statistics

Data presented in Table 5 contain the means, 95% confidence intervals of the means, standard deviations, normality, ranges, and internal consistencies of our dependent variables. Interestingly, participants significantly differed on their average reported levels of DE/EB, with participants reporting less OE (*Mean 95%CI* = 2.1 to 2.6) than both DT (*Mean 95%CI* = 3.6 to 4.2) and EBE (*Mean 95%CI* = 2.9 to 3.5). The highest average of our study dependent variables was drive for thinness. For our traditional predictors (see Table 6), similarly scaled MEBBIE-2 predictors contained a lower average of MD (*Mean 95%CI* = 3.1 to 3.6) compared to both FD (*Mean 95%CI* = 3.9 to 4.5) and BD (*Mean 95%CI* = 3.8 to 4.2). Participants reported an average DEP total score well above the critical value of 16 (*Mean 95%CI* = 19.5 to 25.5). Regarding minority stress predictors (see Table 7), visual examination of histogram plots for the RD (*Mean 95%CI* = 14.2 to 17.4, *Skewness* = 0.16, *Kurtosis* = -1.24), HD (*Mean 95%CI* = 14.0 to 16.7, *Skewness* = 0.29, *Kurtosis* = -0.90), and RRD (*Mean 95%CI* = 11.4 to 14.1, *Skewness* = 0.52, *Kurtosis* = -0.99) scales revealed a noticeable positive skew, where more participants reported less distress from racism and heterosexism than those who reported higher amounts of distress. Given skewness and kurtosis values place normality within acceptable levels for the purpose of

HMR for all study variables, no transformations of the data were conducted to correct for the visual positive skew of RD, HD, and RRD.

3.3 Bivariate Statistics

Table 8 contains the results of two-tailed Pearson correlation coefficients for our variables of interest, all of which demonstrated a positive relationship with each other. For our dependent variables, DT was significantly correlated to BD ($r = .46, p < .01$), FD ($r = .80, p < .01$), DEP ($r = .25, p < .05$), and MESO ($r = .40, p < .01$), and not related to our minority stress variables ($p > .05$). Our predictor EBE was significantly correlated to BD ($r = .45, p < .01$), FD ($r = .54, p < .01$), DEP ($r = .40, p < .01$), MESO ($r = .27, p < .05$), GRC ($r = .35, p < .01$), RD ($r = .31, p < .01$), HD ($r = .33, p < .01$), and RRD ($r = .29, p < .01$). Both DT and EBE were not significantly related to MD ($p > .05$). For OE, only MD ($r = .37, p < .01$), MESO ($r = .30, p < .01$), and GRC ($r = .31, p < .01$) were significantly correlated. Among our independent variables, body dissatisfaction was significantly correlated with all traditional predictors ($p < .05$), and all minority stress variables except RRD ($p > .05$). The fat dissatisfaction scale was not significantly correlated MD and all minority stress variables ($p > .05$), but significantly correlated to BD ($r = .60, p < .01$), DEP ($r = .31, p < .01$) and MESO ($r = .30, p < .01$). The muscle dissatisfaction scale was significantly correlated with BD ($r = .40, p < .01$), MESO ($r = .65, p < .01$) and GRC ($r = .34, p < .01$), but not with our other independent variables ($p > .05$). For depression, the scale was unrelated to OE, MD, and MESO with no apparent quadratic, cubic, or exponential patterns in the scatter plots. Depression was, however, significantly related to BD ($r = .42, p < .01$), FD ($r = .31, p < .01$), and HD ($r = .31, p < .01$), but unrelated to GRC, RD, and RRD ($p > .05$). The mesomorphic ideal internalization scale was significantly related to all variables of

interest ($p < .05$) except depression. All minority stress variables were significantly correlated with one another ($p < .05$).

3.4 Multivariate Statistics

3.4.1 Mediation Path Analysis

The relationship between MESO and DT was partially mediated by FD, which is depicted in Figure 4. The standardized regression coefficient between MESO and FD was statistically significant, as was the standardized regression coefficient between FD and DT, with a standardized indirect effect calculated as $(.07)(.67) = .05$. We tested the significance of this indirect effect using bootstrapping procedures. Unstandardized indirect effects were calculated for each of the 5,000 bootstrapped samples, and a 95% confidence interval was calculated using the unstandardized indirect effects of the bootstrapped sampling distribution. The bootstrapped unstandardized indirect effect was .05, and the 95% confidence interval ranged from .01 to .08, thus the indirect effect was statistically significant given zero was not captured in the bootstrapped confidence interval of the sampling distribution. The indirect effect of MESO through DEP (95% CI = -.004 to .004), as well as MESO through both FD and DEP (95% CI = -.003 to .003) were not significant predictors of DT. The final model significantly predicted drive for thinness behaviors ($R^2 = .67$, $F(3, 74) = 49.69$, $p = < .001$), with FD emerging as the significant mediator and the model accounting for 67% of the variance in DT.

The relationship between MESO and EBE was fully mediated by FD and DEP, as depicted in Figure 5. All pathways were significant except from MESO to DEP and from MESO directly to EBE. The indirect effect of MESO through FD (95% CI = .008 to .051), as well as MESO through both FD and DEP (95% CI = .0002 to .014) were significant predictors of emotional and binge eating. The indirect effect from mesomorphic ideal internalization through

depression to predict emotional and binge eating was not significant (95% CI = -.012 to .016). The final model significantly predicted emotional and binge eating behaviors ($R^2 = .36$, $F(3, 74) = 14.02$, $p < .001$), with 36% of the variance in EBE accounted for by the mediation model.

The relationship between MESO and OE was fully mediated by MD, with all pathways through DEP not significant, as depicted in Figure 6. The indirect effect of MESO through MD (95% CI = .003 to .072) in predicting OE was significant. MESO through depression (95% CI = -.005 to .018), as well as MESO through both MD and DEP (95% CI = -.007 to .005) were not significant predictors of over-exercise behaviors. The direct effect of mesomorphic ideal internalization predicting over-exercise was also not significant (95% CI = -.016 to .085). The final model significantly predicted over-exercise behaviors ($R^2 = .11$, $F(3, 74) = 3.17$, $p = .029$), with 11% of the variance in OE accounted for by the mediation model.

3.4.2 Hierarchical Multiple Regression

The first model tested was for DT, and it included all hypothesized predictors despite bivariate correlations that were not significant. Although the overall model was significant, $F(9, 68) = 16.47$, $p < .001$, the interaction term and variables that were not significantly related to DT in bivariate analyses continued to contribute marginally and were not significant ($p > .05$). The final model was adjusted to remove variables that were not significant in both bivariate and multivariate analyses, as depicted in Table 9. The adjusted model was significant [$R^2 = .678$, $F(9, 68) = 16.47$, $p < .001$] and accounted for 67.8 of the variance in DT. Interestingly, FD ($\beta = .808$, $p < .001$) contributed the most when predicting DT, followed by MESO ($\beta = .224$, $p = .004$). Although BD and MESO were significantly correlated with DT in bivariate analyses, their effects were mitigated in the adjusted model and were not significantly related to DT when holding other predictors constant ($p > .05$).

When predicting EBE, the model including all hypothesized predictors was significant, $F(9, 68) = 6.041, p < .001$, however the minority stress variables and interaction term were similarly not significant ($p > .05$), despite significant bivariate analyses. In the initial hypothesized model, GRC was moderately related to EBE after holding all other predictors constant, although not significantly so ($p > .05$). As depicted in Table 10, an adjusted model including all traditional predictors as well as GRC was significant [$R^2 = .409, F(5, 72) = 9.98, p < .001$] and accounted for 40.9% of the variance in EBE. Additionally, the model including GRC significantly contributed to the overall variance accounted for when predicting EBE [$\Delta R^2 = .044, \Delta F(1, 72) = 5.31, p = .024$], with an increase of 4.4% of the variance in EBE being accounted for if GRC is included in the model. When holding all predictors in the model constant, the FD scale ($\beta = .409, p = .001$) contributed the most to predicting EBE, followed by GRC ($\beta = .230, p = .024$) and then DEP ($\beta = .211, p = .040$). DEP and GRC were not significant in the model after multiplicity adjustment using a Bonferroni correction ($p > .016$). Although both BD and MESO were significantly related to EBE in bivariate analyses, they were not significant in the adjusted model ($p > .05$).

The initial model predicting OE including all hypothesized predictors was significant, $F(9, 68) = 2.501, p = .016$, however predictors that were not significant in bivariate analyses continued to marginally predict OE and were not significant ($p > .05$). As depicted in Table 11, an adjusted model including all variables significantly correlated with OE in bivariate analyses was significant [$R^2 = .172, F(3, 74) = 5.12, p = .003$] and accounted for 17.2% of the variance in OE. The MD scale significantly predicted OE when MESO was held constant ($\beta = .264, p = .038$), but not when GRC was included in the model ($p = .064$). Although MD, MESO, and GRC

were significantly correlated with OE in bivariate analyses, all three variables were not significant in the final model ($p > .05$) when holding other predictors in the model constant.

CHAPTER 4

DISCUSSION

4.1 Theoretical Implications

Results of modeling DE/EBs for Q-BIPOC men reveal a clear lack of support for our theoretical understanding of over-exercise behaviors. Although we were able to successfully predict OE with the combined contributions of modeled risk factors, each of the variables lacked unique contribution in explaining OE variance. Consistent with Tylka and Adnorka's work (2012), and in support of hypothesis 1, both internalization of the mesomorphic ideal and muscle dissatisfaction appeared to be involved in Q-BIPOC over-exercise behaviors, but only marginally so. In contrast to the findings of OE, our theoretical understanding of emotional and binge eating behaviors in Q-BIPOC men demonstrated adequate modeling of hypothesized variables.

Hypothesis 1 was also supported through mediational analysis of EBE and DT, lending further support to the dual pathway model (Convertino et al., 2021; Tylka & Adnorka. 2012) and tripartite model (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Yamamiya, Shroff, & Thompson, 2008). Affect regulation theory appeared to apply only to emotional and binge eating in Q-BIPOC men, as evidenced by depression's limited relevance to drive for thinness and over-exercise behaviors in mediational path analysis. This is in support of prior literature examining emotion regulation and disordered eating in a sample of men (Kukk, & Akkermann, 2019).

Results derived from hypothesis 2 and our proposed intersectional minority stress and affect regulation theory for DE/EBs yielded mixed results. Although GRC was related to OE and EBE on a bivariate level, it was unrelated to DT. This finding suggests that Q-BIPOC men higher in masculinized stress tend to report higher levels of muscularity drives and emotional and binge eating behaviors. This finding is in support of literature which hypothesizes conformity to

masculinized gender roles puts men at risk for developing muscularity-based eating disorders (Griffiths et al., 2015), and that thinness behaviors are best categorized for our sample as feminine in nature and thus unrelated to GRC. As such, it is possible that both emotional and binge eating behaviors, as well as over-exercise behaviors, could be seen “safe” maladaptive coping behaviors for the Q-BIPOC men in our sample, in-so-much as those behaviors would not threaten their sense of masculinity, masculinized gender norms, and resulting GRC.

Furthermore, GRC was related with EBE uniquely when modeled with traditional predictors, suggesting that the experience of masculinized gender role stress in Q-BIPOC men might be distressing enough by itself to require maladaptive coping strategies. Although EBE was correlated with our other minority stress variables as well, lending partial support to hypothesis 2, we were unable to find significant support for hypothesis 3. All minority stress variables were unrelated to DE/EBs after accounting for traditional predictors, except in the case of GRC predicting EBE. Furthermore, we were unable to support hypothesis 4, as the overlapping experiences intra-community racism and heterosexism were unrelated to DE/EBs.

Findings from our sample, particularly lack of support for overlapping minority stress hypotheses, point to the possibility that as Q-BIPOC men face the continual barrage of racist acts (Ghabrial, 2017; Balsam et al., 2011; Kudler, 2007), microaggressions (Jackson et al., 2020), racially loaded discussions of safety when encountering police (Johnson et al., 2020; Watkins, 2016), depictions of race-related hate crimes (Gover et al., 2020; Tynes et al., 2019; Williams, 2018), and mitigated avenues of achievement (Miguel, & Gargano, 2017), they might develop resistance to oppression by the time they “come out” and face overlapping oppressive experiences. This suggests that, at least in the case of DE/EBs, a minority resilience framework may be part of the mechanisms behind Q-BIPOC maladaptive coping behaviors.

4.2 Clinical Implications

Our study demonstrated the importance of intersectional investigations of clinical phenomenon. Contrary to prior literature, our data show that depression symptoms play less of a role in Q-BIPOC men's DE/EBs (Strübel, & Petrie, 2020; Green et al., 2009; Olivardia et al., 2004). Depression was only moderately related to emotional and binge eating, unlike strong associations found in prior literature (Grilo, White, & Masheb, 2009), with fat dissatisfaction exhibiting nearly twice the standardized effect in predicting emotional and binge eating compared to depression's role. Regarding drive for thinness, depression was only mildly related on a bivariate level, and the relationship was completely mediated by other variables in the model. Depression was also unrelated to over-exercise behaviors for Q-BIPOC men in our sample, contrary to prior research (Olivardia et al., 2004).

Interestingly, it also did not appear that Q-BIPOC men who were concerned with their body image in general reported higher levels of disordered eating and exercise behaviors, after holding other predictors constant. Instead, and consistent with prior literature (Tylka & Andorka, 2012), those who were specifically dissatisfied with either their fat or muscularity reported higher levels of disordered eating and exercise behaviors. Q-BIPOC men may consequently benefit from specificity of their body image dissatisfaction domain, if clinicians are concerned with assessing relevant risk factors. Consistent with Tylka and Adnorka's research (2012), Q-BIPOC men exhibited hypothesized pathways from internalization of ideals to dissatisfaction, and finally pathological behaviors. Mediational pathways clearly benefitted from the distinct measurement of fat/muscle dissatisfaction, and clinicians are encouraged to incorporate this finding into their client conceptualizations.

Another finding with clinical relevance is that depression was only related to the minority

stress variable measuring distress from heterosexism within communities of color. This finding supports literature highlighting the particularly toxic experience Q-BIPOC may face if they are rejected from family and community for being queer (Finch & Vega, 2003), but contrasts with research linking racial discrimination to depression (Williams, 2018; Williams et al., 2003). For our sample, data supports the notion that experiencing racism within the queer community does not negate the potential psychological benefits of being within community and is consistent with various mixed findings literature (Vargas, 2020). Clinicians are encouraged to critically assess how connection to the queer community impacts depressed Q-BIPOC men, and to carefully consider the appropriateness of conceptualizing client reports of discrimination within LGBT spaces.

Over 93% of our Q-BIPOC male sample endorsed critical DE/EB items, indicating only a small proportion of our sample (about 6%) would not have needed to be assessed for a potential diagnosis in a clinical setting. This data implies that Q-BIPOC men, by and large, would likely need to be screened and assessed for potentially diagnosable maladaptive behaviors, such as purging, restrictive eating, diet pill usage, binge eating, and supplement use. This result is surprising and in contrast to a prior study, which reported no uncontrollable binge eating behaviors in a sample of both gay and heterosexual men (Kaminski et al., 2005). In contrast, our Q-BIPOC male sample contained over 65% participants who reported the same behavior.

4.3 Limitations

Recruitment, analysis, and reporting of this research study were conducted during the covid-19 global pandemic, which continues to ravage human society. Disproportionate and massive amounts of death in communities of color (Karmakar, et al., 2021), resulting loss and grief, isolation during quarantine conditions, and a host of other negative impacts that are just

beginning to be understood (Liu and Modir, 2019). One significant limitation is our ability to interpret findings related to depression, and how our findings may be confounded with the realities of surviving during this time. In a popular piece published by The New York Times, Adam Grant (2021) wrote the following about how we are functioning during covid-19:

Languishing is the neglected middle child of mental health. It's the void between depression and flourishing — the absence of well-being. You don't have symptoms of mental illness, but you're not the picture of mental health either. You're not functioning at full capacity. Languishing dulls your motivation, disrupts your ability to focus, and triples the odds that you'll cut back on work. It appears to be more common than major depression — and in some ways it may be a bigger risk factor for mental illness.

Grant's insights point us to the very real possibility that instead of participants reporting true depression symptoms, they were reporting the expected languishing of life during a global pandemic. Pandemic languishing is a new human experience for most people.

Particularly notable is the closures of gyms throughout data collection due to the covid-19 pandemic. Given that our outcome variable over-exercise is measured by the MEBBIE-2 and specifically references gym use, we cannot be certain whether such measurement accurately captured the nature of over-exercise behaviors. It is also possible that pandemic conditions have protected Q-BIPOC folks from the effects of daily social racism and heterosexism microaggressions, given insulation from typical social events where this may transpire (e.g., large parties, social gatherings, family events, restaurant/gym visits). As such, relational variables, such as racism experiences, heterosexism experiences, and relationship racism experiences, are likely not as impactful or common during pandemic isolation. Current findings would need to be replicated during typical, non-pandemic social conditions to accurately reflect on these constructs.

Additionally, recruitment during the covid-19 pandemic may have inadvertently biased our sample. Wiederhold (2020) discussed a unique pandemic experience called "Zoom Fatigue,"

where individuals socialize and sometimes work from home using video conferencing software. The effects of Zoom fatigue may leave individuals not included in our sample in a state of mind that would have prevented them from being able to complete the survey, if they even wished to. Although the survey was kept brief to reduce fatigue, we could never have accounted for how the covid-19 pandemic would have impacted recruitment. Data collection took months longer than expected, and when participants sat down to take the survey, 76 of them did not participate completely. As such, it is likely that the final sample we collected were from a subsample of Q-BIPOC folks who, somehow, were able to find the motivation to stare at a screen and focus.

Beyond limitations inherent in data collection during covid-19, the current research study is exploratory, correlational, and findings should be interpreted cautiously until replicated using methods that can determine causal relationships between our measured constructs. Furthermore, due to an error in survey creation, the reported sexual orientations were captured in the screening data only. Given strictly heterosexual individuals were excluded from the sample, we can be confident in our assertion that the sample can be categorized queer. We cannot, however, describe our final sample's self-reported sexual orientation to any degree of accuracy, given screening data and survey data were collected separately. Additionally, our measures have been normed from largely cis-gender participants, and we were not able to include transgender individuals into the scope of our research. As such, we use the descriptor queer in this manuscript somewhat inaccurately, given it is only in reference to sexual orientation, and queer is generally inclusive of gender-binary nonconforming individuals, when they choose to use the term (Riggs & Treharne, 2017). In general, use of the word queer is a sporadic phenomenon across the US, was reclaimed only recently (Brontsema, 2004), and should be viewed in this manuscript as a word of convenience to describe the context in which our data were captured.

Furthermore, MSM who are BIPOC may have identified as “strictly heterosexual” (Persson et al., 2017; Twenge et al., 2016) and thus excluded from the study. Although the screening items were crafted to increase the likelihood that MSM may identify as “mostly heterosexual,” we cannot eliminate the possibility that our sample mostly contained Q-BIPOC men who were comfortable enough with their sexual identity to report accurately. Similarly, despite careful recruitment procedures, screening, and software safeguards, savvy white or heterosexual men who somehow viewed the advertisement may have been able to malingering their responses the one time they were allowed to complete the screening. Although the likelihood of this possibility was as low as could be managed for an online survey, the extent to which white and heterosexual malingering impacted this study cannot be determined.

4.4 Future Directions

Taken together, the evidence points to a possibility that a model which includes minority resilience for Q-BIPOC men (McConnell, 2018) may need to be examined in future work. The limited relevance of depression, racism, and heterosexism when predicting DE/EBs in the current sample send a clear message that a deficit model is not sufficient. The minority stress theory, particularly multiple minority stress, can imply that Q-BIPOC folks work from a deficit due to experiences of oppression from various angles (Cyrus, 2017). While their experiences of racism and heterosexism are well documented (Velez et al., 2019), our findings suggest that a minority stress and resilience model may need to be developed before we can fully understand Q-BIPOC men’s disordered eating and exercise behaviors. For instance, to what extent would holding distress tolerance constant improve the predictive power of our studied minority stress variables? Furthermore, prior research examining intracommunity stressors within the queer community (Pachankis et al., 2020) may shed light on the importance of incorporating community

identification and involvement, which has been shown to be predictive of eating pathology in sexual minority samples (Convertino, 2021).

Additionally, researchers are beginning to understand and measure the empowerment and resilience that is cultivated when BIPOC respond successfully to racism (Suyemoto, 2020). Incorporating these developing measures may help organize and improve the predictive power of our hypothesized minority stress variables. More appropriate, sensitive, and effective measurement of sexuality will also improve the contextualization of our research findings for Q-BIPOC men. As such, we recommend that future intersectional studies improve upon current measurement to be inclusive of MSM who are BIPOC. As screening measures need to be brief and simple to be effective, the inherent difficulty in this task may be beyond the scope of internet-based survey research, given MSM sexual behaviors are often a complex epidemiological task to accurately capture (Zeglin, 2019; Carrillo & Hoffman, 2016).

Future work may also benefit from the creation and use of measures that are designed to capture our variables of interest for transgender POC. Although we were not able to study this population in the current research, developments in measurement for transgender populations (Duffy et al., 2021; Van De Grift et al., 2016) are opening new avenues for disordered eating research. Intersectional investigations examining the impact of racism and sexism may be particularly important for trans POC, given the current and historical discrimination and associated poor psychological outcomes noted in recent literature (Lefevor et al., 2019).

Overall, the current study highlights the needs for clinicians and researchers to examine psychosocial phenomenon through the lens of intersectionality. While intersectional minority stress hypotheses were not supported with the data, traditional and well-established risk factors of disordered eating and exercise behaviors behaved differently for Q-BIPOC men than they

have in studies using a white standard. Although our population of interest was difficult to recruit due to the differential impact of the covid-19 pandemic, institutional limitations in advertising, and the veracity of homophobia and racism, the rewards of such an undertaking far exceeded the inherent difficulties of the task. Following the fruitful and nuanced findings of our disordered eating and exercise behavior exploration, we encourage researchers to incorporate intersectional frameworks into their own fields of study and rely less on the notion that psychological phenomenon are color-blind.

Table 1

Principle Component Analysis Pattern Matrix for the MEBBIE 2

Scale	Items	Component	
		1	2
Fat Dissatisfaction	2	.793	-.110
	12	.881	-.245
	42r	.849	-.076
Muscle Dissatisfaction	23	.043	.705
	36	-.048	.741
	45	.006	.754
	49	-.152	.602
	54r	-.022	.648
Body Dissatisfaction	40r	.801	.079
	43r	.424	.437
	47r	.388	.463
	52	.747	.287

Note. The rotation method used was Oblimin with Kaiser Normalization, and the rotation converged in 6 iterations (of 25). The letter “r” next to the item number indicates the item is reverse scored.

Table 2

Principle Component Analysis Pattern Matrix for the Internalization Scale of the SATAQ-4r

Scale	Items	Component		
		1	2	3
Muscle Ideal	8	.958	-.005	.158
	5	.896	.036	-.060
	1	.893	.004	-.037
	3	.784	-.051	-.111
Thin Ideal	2	-.073	.909	.098
	4	.068	.869	-.121
General Appearance	6r	-.058	-.039	-.965
	7r	.099	.075	-.882

Note. The rotation method used was Oblimin with Kaiser Normalization, and the rotation converged in 5 iterations (of 25). The letter “r” next to the item number indicates the item is reverse scored.

Table 3

Demographics of Total Sample Invited to the Main Survey (N = 156)

Variable	Value	Statistic	n	%
Sexual Orientation	Mostly Heterosexual		7	4.5
	Both heterosexual and gay		16	10.3
	Mostly gay		31	19.9
	Strictly gay		77	49.4
	Asexual		3	1.9
	Pansexual		12	7.7
	Other		7	4.5
	Missing		3	1.9
Ethnicity	Black		26	16.7
	Latinx		48	30.8
	Asian		37	23.7
	Native American/Pacific Islander		4	2.6
	Bi-ethnic or Multiethnic		32	20.5

(table continues)

Variable	Value	Statistic	n	%
	Other		6	3.8
	Non-American		3	1.9
Age (in years)	Mean	26.9		
	Std. Deviation	7.7		
	Minimum	18		
	Maximum	64		

Table 4

Demographic Data Frequencies and Descriptive Statistics for Analyzed Sample (N = 78)

Variable	Value	Statistic	n	%
Ethnicity	Black		11	14.1
	Latinx		24	30.8
	Asian		18	23.1
	Native American/Pacific Islander		1	1.3
	Bi-ethnic or Multiethnic		17	21.8
	Other		5	6.4
	Non-American		2	2.6
Relationship Status	Single		44	56.4
	Non-exclusive dating		5	6.4
	Exclusive dating		8	10.3
	Open or poly-amorous relationship(s)		4	5.1
	Monogamous relationship		16	20.5
	Missing		1	1.3
Age (in years)	Mean	27.4		
	Std. Deviation	7.8		
	Minimum	18		
	Maximum	64		
BMI	“Underweight”		2	2.6
	“Healthy Weight”		29	37.2
	“Overweight”		19	24.4

(table continues)

Variable	Value	Statistic	n	%
“Obese”			26	33.3
Mean		29.7		
Std. Deviation		10.2		
Minimum		16.7		
Maximum		75		
Missing			2	2.6

Note. BMI categories were calculated as follows: BMI < 18.5 = “Underweight,” BMI ≥ 18.5 to < 25 = “Healthy Weight,” BMI ≥ 25.0 to < 30 = “Overweight,” and BMI ≥ 30 = “Obese” (CDC, 2020)

Table 5

Descriptive Statistics for Dependent Variables

	DT	EBE	OE
Mean	3.9	3.2	2.3
95% CI Lower Mean	3.6	2.9	2.1
95% CI Upper Mean	4.2	3.5	2.6
Std. Deviation	1.3	1.3	1.1
Obtained Min	1.00	1.00	1.00
Obtained Max	6.00	6.00	5.00
Possible Min	1	1	1
Possible Max	6	6	6
Cronbach’s Alpha	.77	.85	.79
Number of Items	4	4	4

Note. DT = Drive for Thinness, EBE = Emotional and Binge Eating, and OE = Over-Exercise

Table 6

Descriptive Statistics for Traditional Predictors

	BD	FD	MD	DEP	MESO
Mean	4.0	4.3	3.6	22.5	26.9
95% CI Lower Mean	3.8	3.9	3.1	19.5	25.5
95% CI Upper Mean	4.2	4.5	3.6	25.5	28.3
Std. Deviation	1.0	1.4	1.0	13.2	6.1

(table continues)

	BD	FD	MD	DEP	MESO
Obtained Min	1.50	1.00	1.40	0	11
Obtained Max	6.00	6.00	6.00	52	37
Possible Min	1	1	1	0	8
Possible Max	6	6	6	60	40
Cronbach's Alpha	.78	.90	.75	.92	.76
Number of Items	4	3	5	20	8

Note. BD = Body Dissatisfaction, FD = Fat Dissatisfaction, MD = Muscle Dissatisfaction, DEP = Depression, and MESO = Mesomorphic Ideal Internalization

Table 7

Descriptive Statistics for Minority Stress Variables

	GRC	RD	HD	RRD
Mean	49.6	15.8	15.4	12.8
95% CI Lower Mean	46.7	14.2	14.0	11.4
95% CI Upper Mean	52.6	17.4	16.7	14.1
Std. Deviation	13.2	7.1	6.1	6.1
Obtained Min	20	6.00	6.00	6.00
Obtained Max	82	30.00	28.00	28.00
Possible Min	15	6	6	6
Possible Max	90	30	30	30
Cronbach's Alpha	.86	.86	.79	.78
Number of Items	15	6	6	6

Note. GRC = Gender Role Conflict, HD = Heterosexism distress within communities of color, RD = Racism distress within LGBT communities, and RRD = Racism distress within LGBT relationships.

Table 8

Bivariate Two-Tailed Pearson Correlation Coefficients

	1	2	3	4	5	6	7	8	9	10	11	12
1. DT	1											
2. EBE	.43**	1										
3. OE	.40**	.37**	1									
4. BD	.46**	.45**	.06	1								
5. FD	.80**	.54**	.18	.60**	1							
6. MD	.08	.17	.37**	.40**	.01	1						
7. DEP	.25*	.40**	.15	.42**	.31**	.06	1					
8. MESO	.40**	.27*	.30**	.48**	.30**	.65**	.14	1				
9. GRC	.13	.35**	.31**	.31**	.16	.34**	.19	.38**	1			
10. RD	.10	.31**	.16	.23*	.13	.17	.16	.32**	.44**	1		
11. HD	.12	.33**	.12	.31**	.12	.18	.31**	.33**	.33**	.72**	1	
12. RRD	.04	.29**	.20	.16	.05	.17	.18	.25*	.29*	.76**	.64**	1

Note. DT = Drive for Thinness, EBE = Emotional and Binge Eating, OE = Over-Exercise, BD = Body Dissatisfaction, FD = Fat Dissatisfaction, MD = Muscle Dissatisfaction, DEP = Depression, MESO = Mesomorphic Ideal Internalization, GRC = Gender Role Conflict, HD = Distress from heterosexism within communities of color, RD = Distress from racism within LGBT communities, and RRD = Distress from racism within relationships. ** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level.

Table 9

Adjusted Multiple Regression Model of Drive for Thinness

Variable	Unstandardized Coefficients		Standardized Coefficients <i>Beta</i>	<i>t</i>	<i>p</i>	η^2	Tolerance	VIF
	<i>B</i>	<i>SE</i>						
(Constant)	.197	.416		.473	.637			
BD	-.170	.114	-.141	-1.499	.138	.010	.495	2.019
FD	.728	.075	.808	9.747	.000	.419	.641	1.560
DEP	.002	.007	.025	.343	.733	.001	.817	1.223
MESO	.046	.016	.224	2.944	.004	.038	.765	1.307

Note. The variables BD = Body Dissatisfaction, FD = Fat dissatisfaction, DEP = Depression, and MESO = Mesomorphic Ideal Internalization.

Table 10

Adjusted Hierarchical Multiple Regression Model for Emotional and Binge Eating

Model	Unstandardized Coefficients		Standardized Coefficients <i>Beta</i>	<i>t</i>	<i>p</i>	η^2	Tolerance	VIF
	<i>B</i>	<i>SE</i>						
1	(Constant)	.358	.591	.606	.546			
	BD	.101	.161	.083	.627	.533	.495	2.019
	FD	.362	.106	.397	3.411	.001	.641	1.560
	DEP	.022	.010	.233	2.256	.027	.817	1.223
	MESO	.016	.022	.076	.715	.477	.765	1.307
2	(Constant)	-.163	.617	-.264	.792			
	BD	.058	.158	.048	.368	.714	.488	2.047

(table continues)

Model	Unstandardized Coefficients		Standardized Coefficients <i>Beta</i>	<i>t</i>	<i>p</i>	η^2	Tolerance	VIF
	<i>B</i>	<i>SE</i>						
FD	.373	.103	.409	3.613	.001	.107	.640	1.563
DEP	.020	.010	.211	2.094	.040	.036	.810	1.234
MESO	.001	.022	.006	.051	.959	.000	.703	1.422
GRC	.022	.010	.230	2.303	.024	.044	.826	1.210

Note. The variables BD = Body Dissatisfaction, FD = Fat dissatisfaction, DEP = Depression, MESO = Mesomorphic Ideal Internalization, and GRC = Gender Role Conflict.

Table 11

Adjusted Hierarchical Multiple Regression Model for Over Exercise

Model	Unstandardized Coefficients		Standardized Coefficients <i>Beta</i>	<i>t</i>	<i>p</i>	η^2	Tolerance	VIF
	<i>B</i>	<i>SE</i>						
1	(Constant)	.783		1.460	.148			
	MD	.301	.142	.296	2.113	.038	.051	.583
	MESO	.019	.025	.106	.758	.451	.007	.583
2	(Constant)	.342		.580	.564			
	MD	.267	.142	.264	1.884	.064	.040	.572
	MESO	.010	.026	.053	.377	.708	.002	.555
	GRC	.016	.010	.195	1.690	.095	.032	.840

Note. The variables BD = Body Dissatisfaction, MD = Muscle dissatisfaction, MESO = Mesomorphic Ideal Internalization, and GRC = Gender Role Conflict.

Figure 1

Intersectional Minority Stress and Affect Regulation Conceptual Model

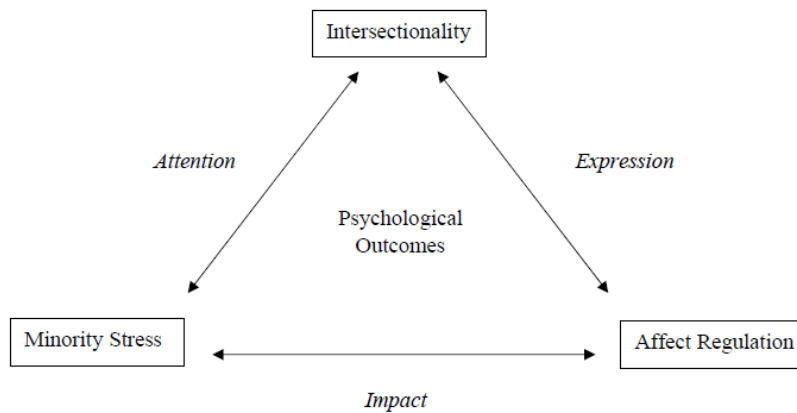
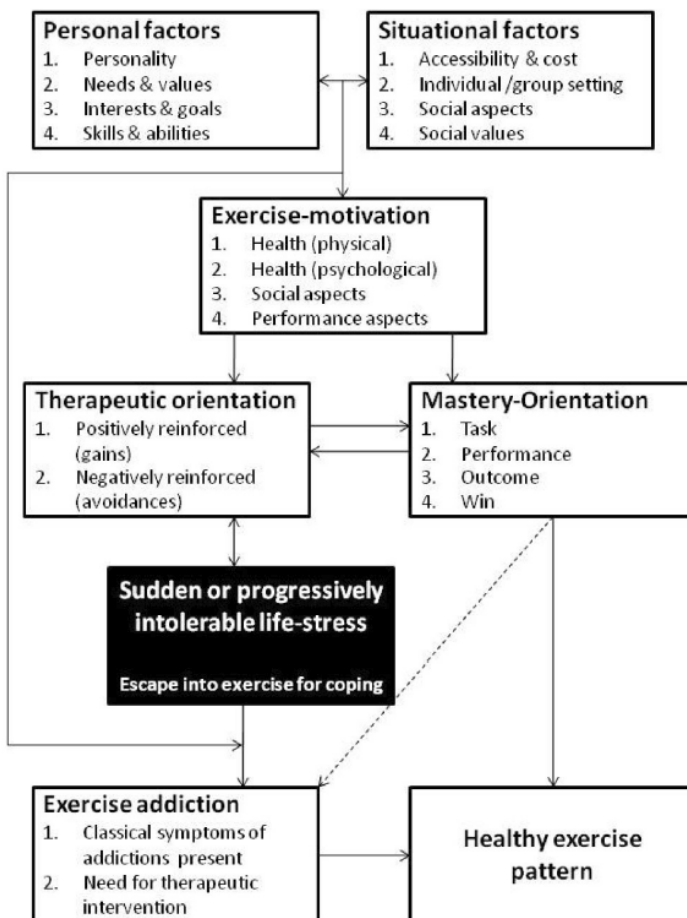


Figure 2

Model for Exercise Addiction



Source: Egorov & Szabo, 2013, pg. 205.

Figure 3

Hypotheses 1a and 1b Mediation Model

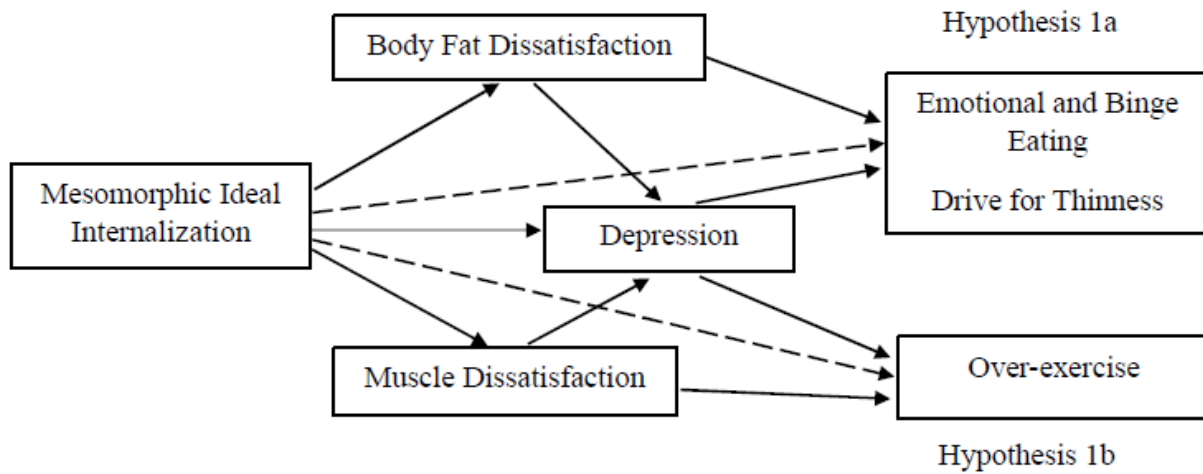
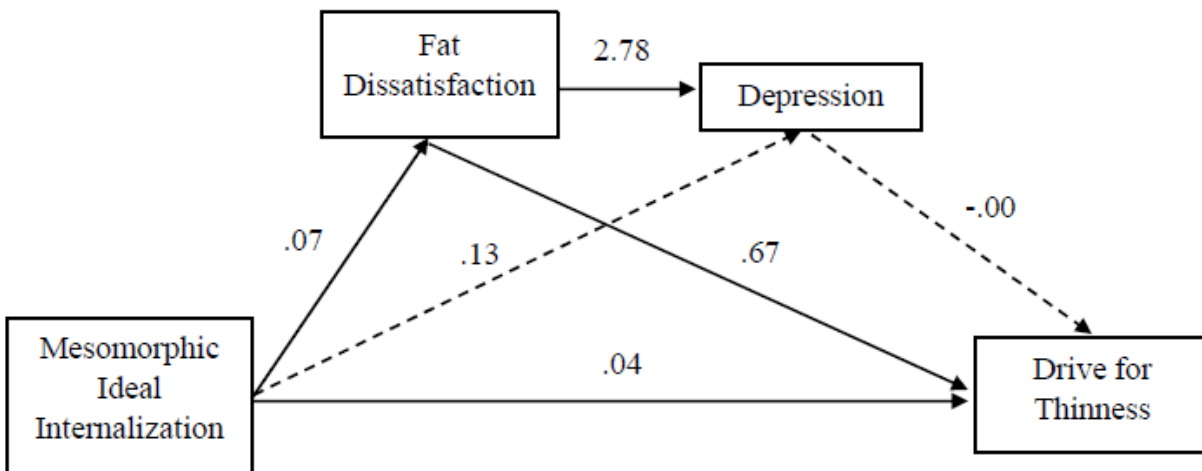


Figure 4

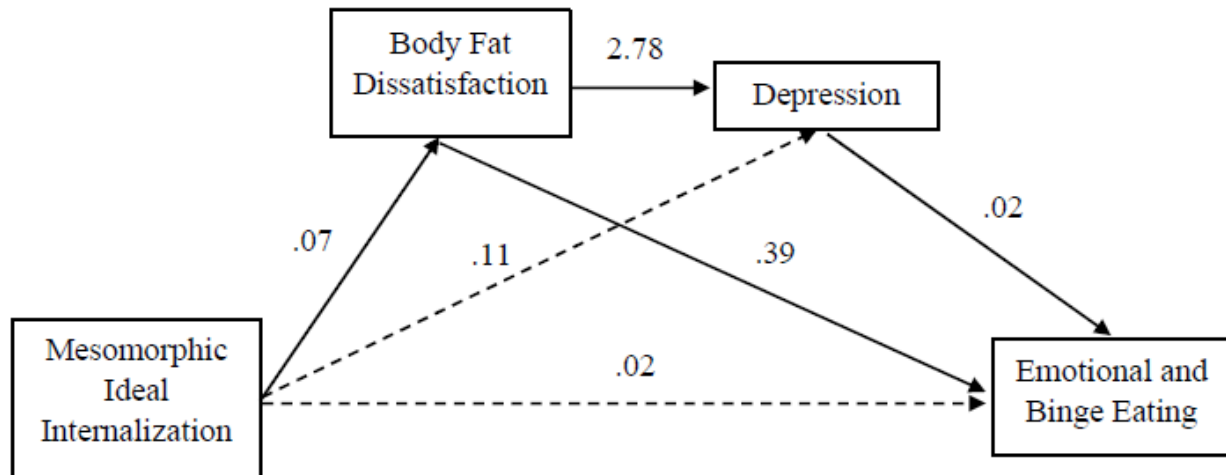
Partial Mediation of Drive for Thinness



Note. The listed effects in the model are bootstrapped unstandardized regression coefficients. The solid line indicates a significant effect using a bootstrapped 95% confidence interval of effects, with zero not included in the confidence interval. The dotted line indicates an effect that is not significant, with zero included in the confidence interval.

Figure 5

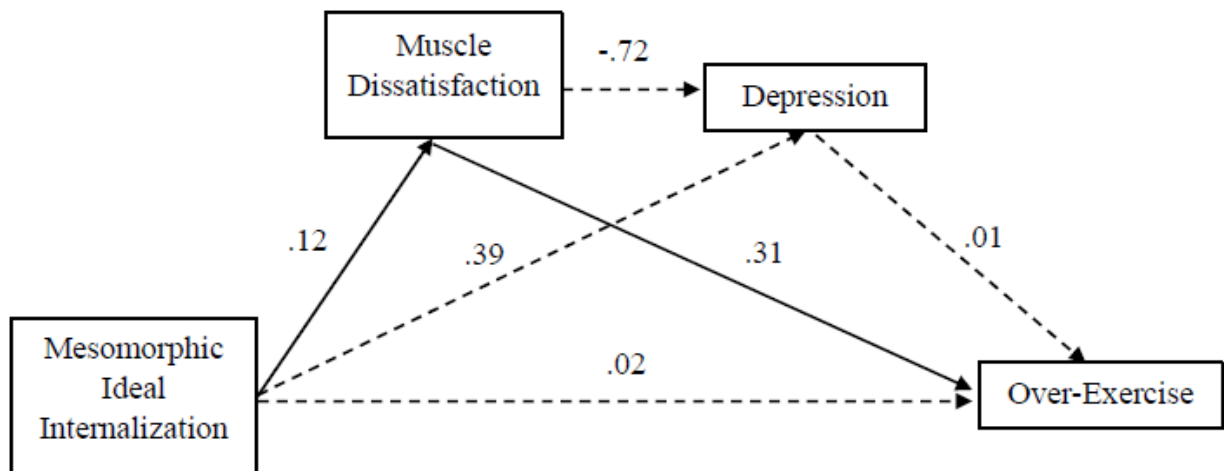
Mediation Model of Emotional and Binge Eating



Note. The listed effects in the model are bootstrapped unstandardized regression coefficients. The solid line indicates a significant effect using a bootstrapped 95% confidence interval of effects, with zero not included in the confidence interval. The dotted line indicates an effect that is not significant, with zero included in the confidence interval.

Figure 6

Mediation Model of Over-Exercise



Note. The listed effects in the model are bootstrapped unstandardized regression coefficients. The solid line indicates a significant effect using a bootstrapped 95% confidence interval of effects, with zero not included in the confidence interval. The dotted line indicates an effect that is not significant, with zero included in the confidence interval.

APPENDIX A
EXPANDED LITERATURE REVIEW

This study examined disordered eating and exercise behaviors (DE/EB) among queer men who are also black, indigenous, or people of color (Q-BIPOC). Studies on this subject are of interest to clinicians and researchers, given the dearth of literature examining DE/EB within identity intersections. To highlight this, Miller and Luk (2018) recently conducted a meta-analysis which revealed noticeable disparities among young sexual minority men, who exhibited higher rates of bingeing, purging, restrictive dieting, diet pill usage, and lower body image than their heterosexual peers. In the studies analyzed, however, they suggest that differences within ethnic minority and sexual minority men could not be fully examined, due to predominantly white samples. Similarly, another study examining DE/EB correlates contained a sample of 7,843 young men, with 94% of their sample identifying as white (Calzo et al., 2015). This study is an example of a longstanding pattern within psychological literature, whereby white individuals are studied extensively, and other ethnic identities are compared against the “white standard” (Jones, 1993; Graham, 1992; Guthrie, 2004; Mio, Barker, & Rodriguez, 2016).

The “white standard” has several implications to psychological literature at large (for a review, see Hankerson et al., 2015; Neighbors et al., 1989), particularly (and as an example), this phenomenon is pervasive in the literature examining cultural expressions of depression symptoms (Payne, 2012). Researchers see cultural expressions of symptomology as different from classically defined symptomology, and it has been shown to impact diagnostic accuracy of clinicians (2012). Although it may be that inherent racial bias causes clinicians to misinterpret ethnic minority symptomology (Corbie-Smith et al., 2002), it may also be the case that the same categories of behavior and symptomology are experienced differently due to cultural experiences.

For instance, African Americans tend to report more mixed affective experiences

(Lankarani & Assari, 2017) and co-morbid somatic symptoms with depression (Hankerson et al., 2011) in comparison to their white peers. Researchers have also expanded the framework behind this finding to the cultural expression of childhood sexual abuse (Payne et al., 2014), although studies of cultural symptomological differences across the vast array of psychological disorders are typically limited. Given the potential for clinical bias (Payne, 2012), it is possible that many minority populations feel misunderstood by mental health professionals and, therefore, rely less on regular preventative mental health services. Evidence for this possibility is seen in the delay of mental health care until times of crisis, as is the case for a disproportionate amount of Black Americans within psychiatric emergency services (Snowden et al., 2009). Although the distinct possibility exists that lack of insurance and income disparities contribute to the observed emergency service usage patterns, qualitative data in an African American sample show that lack of trust towards mental health practitioners is also a possible explanation (Thompson et al., 2004).

Racial disparities constitute one axis of oppression, however, and working within a single-axis frame does not capture the full experience of those with multiple marginalized identities. One explanation for why we might see differences in experience due to overlapping identities is the theory of intersectionality. Kimberlee Crenshaw, who is often credited with coining the term intersectionality, published her scholarly work exploring the marginalization of black women in the legal system (Crenshaw, 1989). The theory underscores our need to consider multiple levels of identity at once— instead of single axis conceptualization— in order to fully understand the specific type of marginalization individuals may face when living under multiple marginalized identities. Following this theoretical lens, when multiple marginalized identities overlap, an individual's lived experiences may lead to psychological outcomes that are unlike

those that have been described based on white samples or samples sharing just one marginalized identity. An example of the psychological impact of intersectional investigation, for male disordered eating and exercise behaviors, is evident in a study exploring ethnic and sexual minority differences in a sample of Southern U.S college men (Pereira et al., in progress). The study highlights the exacerbating effect of living as an Black American gay or bisexual man, which moderates the relationship between negative affect and emotional/binge eating. Moreover, researchers did not find the negative affect exacerbating effect of sexual minority identity in the white sample (in progress). Findings such as these point to the potential for unexamined mechanisms in the disordered eating and exercise behaviors of Q-BIPOC men which have yet to be discovered.

Theory

The current study relies on three interrelated theories as a basis for quantitative investigation: intersectionality (Crenshaw, 1989), minority stress (Meyer, 2003), and affect regulation (Polivy & Herman, 1993). We use intersectionality as a framework by which researchers can focus their attention to the overlapping effect of identities. The theory directs us to give voice and visibility to marginalized members of society who may be overlooked by both clinicians (Adames et al., 2018) and researchers (Cole, 2009).

While intersectionality provides an important framework for investigation, other theories can also help when trying to understand DE/EB among Q-BIPOC men. Minority stress theory considers unique stressors and factors that non-marginalized communities may not experience (Meyer, 2003). Together with intersectionality, we can direct our attention as researchers towards factors that may be important to consider within overlapping marginalized identities (i.e., *attention*; see Figure 1 for a conceptual model). While both intersectionality and minority

stress help us understand the experience of marginalized people, the affect regulation model (Polivy & Herman, 1993) provides a crucial third piece of the conceptual framework for the current study. The theory posits that individuals with insufficient or problematic coping mechanisms in response to negative affect may cope instead with maladaptive behaviors, as is typically the case with disordered eating and exercise behaviors (1993). Some studies exist which call into question whether all DE/EB can be explained with the affect regulation model, with less support for binge and emotional eating and more support for thinness behaviors (for a meta-analysis see Haedt-Matt, & Keel, 2011). The studies which challenge the affect regulation model, however, consisted entirely of women and over 89% identified as white (2011). Putting aside its purported effectiveness in explaining all DE/EB fully, the affect regulation theory helps us to understand the potential *impact* of unique minority stress Q-BIPOC men may face, particularly when they feel they are unable to turn to their own communities for support. Furthermore, when considered with intersectionality, researchers can consider whether differences within overlapping identities alter the *expression* of those symptoms and behaviors. These three theories combine into an intersectional stress and regulation conceptual framework that provides the structure for the current study (see Figure 1).

What follows is a review of the literature on salient DE/EBs as they relate to sexual minority men, ethnic minority men, as well as Q-BIPOC men. Given that the current study is concerned with the intersection of three identities—sexual minority, ethnic minority, and male gender identity--wherever possible the reviewed literature will be kept within those intersections. There are two barriers to this goal: 1) the male DE/EB literature is limited (Murray et al. 2017), and 2) identity variables are typically ancillary (Calzo et. al., 2015). Another aim of the literature review is to summarize seminal works within DE/EB literature, which at times may rely on the

“white standard” and ancillary, single axis identity variables. It will be important to examine these works while considering the possibility that their findings may only be partially applicable to the intersectional population of focus in the current study.

Disordered Eating and Exercise Behaviors (DE/EB) in Men

The various disordered eating and exercise behaviors men engage in can range from subclinical, to higher levels of symptomology characteristic of eating disorders categorized in the DSM-5 (American Psychiatric Association, 2013). For instance, although some patients diagnosed with anorexia nervosa do not express a drive for thinness (Ramacciotti, 2002), most typically do and it is considered a criterion of the disorder (American Psychiatric Association, 2013). Similarly for emotional and binge eating, patients are categorized into diagnostic labels of bulimia-nervosa and binge eating disorder partially using the frequency and intensity of binge eating episodes (Fitzgibbon et al., 2003). The National Institute of Mental Health prevalence estimates show that nearly a third of binge eating disorder, 25% of anorexia nervosa, and 16% of bulimia nervosa cases from 2001-2003 were men (NIMH, 2017; Hudson et al., 2007). Despite these sizable rates, which are likely underestimated due to male underutilization of mental health treatment (Thapliyal et al., 2018; Mackenzie et al., 2006), treatment specificity for male disordered eating is currently lacking (Kinnaird et al., 2018; Thapliyal & Hay, 2014). Furthermore, data show that men, particularly male athletes, are more likely to report subclinical disordered eating behaviors than women (Chatterton, 2012). Given likely under-reporting of male symptomology and the various associations seen in subclinical male DE/EB (Olivardia et al., 2004; Olivardia et al., 1995), subclinical male disordered eating and exercise behaviors are an important area of intervention and investigation.

Young sexual minority men are at particular risk of drive for thinness and binge eating, with 19 and 20-year-olds reporting a higher rates of dieting, purging, and bingeing than their heterosexual peers (Austin, 2013; Calzo et al., 2015; Kaminski et al., 2005; Russell, & Keel, 2002), a finding replicated in a sample of male veterans (Bankoff, 2016). Along with dieting and emotional eating, gay adult men report more fear of becoming fat than heterosexuals (Kaminski et al., 2005), indicating that weight and body shape concerns are more salient for gay men. In regard to differences by ethnicity, another study with a sample of ethnically diverse adolescents found that African American boys were 1.6 times more likely to report purging behaviors than white boys. This was in stark contrast to African American girls, who were about half as likely to report purging than white girls (Austin, 2013). Similarly, boys who identified as biracial, multiracial, Pacific Islander, American Indian, or Alaskan Native reported 1.54 times the likelihood of purging and 1.49 times the likelihood of diet pill usage than their white peers (2013). Looking within the intersection of ethnicity and sexual orientation for men, anorexia nervosa and bulimia prevalence rates are higher for ethnic minority adult gay and bisexual men, with elevated prevalence for black and Latino gay and bisexual men in comparison to white gay and bisexual men (Feldman & Meyer, 2010). Taken together, queer men appear to be at higher risk for thinness behaviors, with growing evidence that Q-BIPOC men may exhibit rates higher than their already elevated SM peers.

While robust exercise behavior is generally considered a marker of health in adults (Rao, 2019), some forms of exercise are also associated with maladaptive coping and dependence patterns (Berczik et al., 2014). Lichtenstein and colleagues found that in an exercise dependent group, with a regular exercise group serving as a control, participants experienced more pain from physical activities as well as more excitement seeking (2014). Over-exercise behaviors

among gay men appear to be similar to heterosexuals' (Kaminski et al., 2005), but do not appear to be significantly predicted for African American men using traditional risk factors, such as body dissatisfaction, body ideal internalization, self-esteem, and negative affect (Pereira et al., in progress). Evidence exists, however, for higher amounts of compulsive exercise among men who also report higher binge eating (Kelly et al., 2015). Although over-exercise is positively associated to both thinness behaviors and emotional and binge eating, it has not been related to appearance internalization in gay men (Pereira et al., in progress). In a theoretical conceptualization of exercise addiction, Egorov and Szabo (2013, pg. 205) identify a maladaptive coping pathway in response to intolerable stress that helps to explain over-exercise behaviors (see Figure 2). More recent literature highlights the increased rates of disordered eating behaviors in sexual minority Hispanic men (Gonzales IV & Blashill, 2021), although overall the rates of DE/EBs were higher than previously thought for sexual minority men regardless of ethnicity. These findings and discussion point to a need for additional research in order to understand over-exercise in Q-BIPOC men, given the unique stressors and associated need for coping they may face (Meyer, 2003). Before we move into those unique predictors, however, it is also necessary to understand how more traditional predictors of DE/EB may take shape for Q-BIPOC men.

Traditional Predictors of DE/EB

Body dissatisfaction is a crucial factor in a variety of theories used to explain risk factors associated with DE/EB (Pennesi & Wade, 2016). The construct of body dissatisfaction also appears to be a complex construct for men in general, as men who report satisfying relationships are largely protected from its negative effects (McGregor et al., in press), a finding which has yet to be explored for queer men or Q-BIPOC men. Regarding ethnic minority men, body

dissatisfaction is uniquely associated with a drive for thinness, emotional eating, and binge eating (but not over-exercise), among African American and Latino undergraduates (Pereira et al., in progress). Tylka and colleagues discovered that to account for the complexities of body dissatisfaction in men, it may be necessary to conceptualize the internalization of leanness ideals and muscular ideal separately in the prediction of body dissatisfaction for men (Tylka, 2011) and gay men (Tylka, & Andorka, 2012). Following the recommendations of this literature base may assist in properly modeling other behaviors, such as steroid usage or over-exercise behaviors, that are associated with muscularity disorders (Longobardi et al., 2017) in men.

Men also suffer from unique dissatisfaction with their musculature, ranging from muscle size dissatisfaction to a more clinically significant phenomenon called muscle dysmorphia (McFarland & Kaminski, 2009; Longobardi et al., 2017; Olivardia et al., 1995). Symptoms of muscle dysmorphia in men include a variety of weight and shape change behaviors, such as purging, dieting, over-exercise, and diet pill usage (2009). For SM men, body dissatisfaction appears to be highly prevalent (Yelland & Tiggemann, 2003; French, 1996). Data illustrating gender variance in body dissatisfaction measurement (Elosua & Hermosilla, 2013) points to the need for the construct to be measured uniquely for men to account for muscle shape dissatisfaction, a finding also replicated for gay men (Smith et al., 2011). Researchers who have accommodated this literature by operationalizing body dissatisfaction as both muscle and body fat dissatisfaction, have found robust associations between male body dissatisfaction and DE/EB (McFarland & Kaminski, 2009; Kaminski et al., 2005; Tylka, 2011).

Researchers have also found comorbidity between depression and eating disorders (Green et al., 2009), with particularly strong comorbidity in patients diagnosed with binge eating disorder (Grilo et al., 2009). For example, a sample of lesbian, gay, and bisexual (LGB) men and

women reported strong comorbidity of depression with disordered eating (Feldman, & Meyer, 2010). Feldman and Meyer found that more lesbian and bisexual women reported comorbid depression with eating disorders, compared to heterosexual men. Another study with a sample of Hispanic gay men demonstrated a positive association between depression symptoms and disordered eating (De Santis, 2012). Similarly, associations between depression symptoms and emotional binge eating were also identified in samples of African American and Latino men (Pereira et al., in progress).

Two theories explain why there may be associations between depression and eating disorders. The tripartite influence model posits that internalization of societal standards of appearance, such as pressures to be thin or muscular, lead to feelings of depression, body dissatisfaction, and, ultimately, disordered eating (Thompson et al., 1999; Yamamiya et al., 2008), and it has been replicated for sexual minority men (Convertino et al., 2021). Notably the replication was not able to examine intersectional minority stress in their support of the tripartite influence model (2021), given the sample contained individuals identifying as white. Objectification theory also appears to play a role in the process of appearance internalization for sexual minority men, who may objectify themselves and, thus, have heightened body surveillance and shame as a result (Wiseman & Moradi, 2010). In an expansion of the tripartite influence model for men (Tylka, 2011) and gay men (Tylka, & Andorka, 2012), research by Tylka and colleagues support a dual pathway model for body ideal internalization of thinness and muscularity, highlighting the importance of appearance pressure internalization on disordered eating and muscle enhancing behaviors (Tylka, & Andorka, 2012; Tylka, 2011). Although body dissatisfaction, depression, and appearance internalization are related to DE/EB, these associations have been studied primarily in white samples. To accurately apply our conceptual

frame to existing theories and models of DE/EB for Q-BIPOC men, it is also necessary to examine other unique sources of negative affect that Q-BIPOC men may face, and consider whether those sources might be related to maladaptive coping. To this end, we must consider stress from masculinity stress, heterosexism, and racism as vectors of minority stress from Q-BIPOC men.

Masculinity

The link between gay men's body dissatisfaction and gender norms is best conceptualized through objectification theory, where self-objectification of gay male bodies through the lens of societal standards of beauty is related to aspects of disordered eating (Wiseman & Moradi, 2010). Researchers conceptualize masculinity as a driving force of in the lives of gay men, which may also contribute to masculinized standards of beauty (De Visser et al., 2009; Sánchez et al., 2009). Salience of masculine norms for gay men are apparent in a variety of settings, including dating profiles (Eguchi, 2006; 2009) and the media (Giaccardi et al., 2016). The ability to pass as a masculine male and have the option of hiding one's sexuality imbues a number of benefits, including reduced negative responses from other men (Glick et al., 2007) and better job opportunities (Embrick et al., 2007).

Although there are functional benefits to being able to pass as a masculine male and assumed heterosexual, masculinity is also associated positively with measures of internalized homophobia (Thepsourinthone, 2017), a construct derived from the damaging internalization of heterosexist and maladaptive masculine norms prevalent in society (for a review see Szymanski et al., 2008). Although the literature is scant, some data links the construct to body image issues (Kimmel & Mahalik, 2005). In a study examining body image and masculine norms for gay men, Kimmel and Mahalik found a positive association between muscular body ideals and masculine

gender norms. Importantly, participants who conformed to masculine norms did not exhibit elevations of general body image dissatisfaction (2005). General body image dissatisfaction for heterosexual men, in contrast, does seem to be related to masculine gender norms (Butchko, 2016). Taken together, it may be that the relationship between masculine gender norms and types of DE/EB are more nuanced for SM men compared to heterosexual men.

Applying the conceptual framework of intersectional stress and affect regulation to masculinity adds clarity to our interest in the construct. Although masculine norms and body ideals are likely related to the body ideal internalization process for gay men in nuanced ways, we are more interested in the potential distress caused by pursuing conformity to the masculine gender norm, called gender role conflict. Gender role conflict is conceptualized as hegemonic masculinized behaviors and attitudes, which can result in distress within relationships, the workplace, and specifically in relationships with other men as they try to align with traditional masculine gender roles (for a review, see O'Neil, 2008). The phenomenon of Q-BIPOC men on the "down low" (Robinson, 2008; Spieldenner & Glenn 2014), which refers to men who identify as heterosexual and also have sex with men (i.e., "men who have sex with men," MSM; Persson et al., 2017; Twenge et al., 2016), is also related to gender role conflict. A compelling article by Szymanski and Carr successfully models the distress associated with gender role conflict in SM men (2008). Their work illuminates the process by which masculine gender role conflict works through internalized heterosexism in the association with avoidant coping and resultant psychological distress. Although a direct path from gender role conflict to avoidant coping was absent in their largely white sample (2008), the possibility exists that gender role conflict operates differently for Q-BIPOC men specifically (Bishop, 2014), as evidenced by restricted affection mediating the relationships of racism and heterosexism on psychological distress in

Latino and Asian MSM. To better understand why this may be the case, and to clarify the distress from masculine gender role conflict in Q-BIPOC men, it is necessary to account for distress related to heterosexism also.

Heterosexism

The term heterosexism is derived from conceptualizations of homophobia and is considered a more appropriate term (than homophobia) to represent the realities resulting from bias and stigma non-heterosexual individuals may face in their daily lives (Smith et al., 2012). These experiences can range from prejudicial attitudes to beliefs, discrimination, and systemic socio-political discourse which negatively impact sexual minorities (Meyer, 2003; Mio et al., 2012). The effects of heterosexism can include alienation (Flowers & Buston, 2001), parental abandonment and resulting homelessness for LGBT youth (Judge, 2015), homonegative attitudes among social workers and other professionals (Berkman & Zinberg, 1997), housing discrimination, verbal and physical assault, property-based hate crimes (i.e., homophobic graffiti, theft, property destruction), and employment discrimination (Herek, 2009).

In a probabilistic sampling of sexual minorities, Herek found that gay men were more likely to report experiencing threats of physical violence, verbal abuse, actual violence, and property crime as a result of their sexual identity in comparison to lesbian women or bisexual individuals (2009). Facing or witnessing these experiences can be daunting, and as many as 72% of adult SM men report victimization in the past 6 months (Martin & Alessi, 2012). Reports of heterosexism have been linked to psychological distress (Balsam et al., 2011), trauma (Alessi et al., 2013), and internalization of heterosexism (Berg et al., 2016; Szymanski et al., 2008).

Although not as severe as direct and overt heterosexual behaviors, subtle heterosexism (homonegative comments directed at others) is linked with sexual identity discretion (Burn et al.,

2005). It is important to note that controversy exists in the application of internalized heterosexism within communities of color (Purdie-Vaughns & Eibach, 2008), particularly due to the possibility that racism and heterosexism overlap and render the construct less meaningful in communities of color than it is in white SM communities (Denizet-Lewis, 2003; Robinson, 2008). Generally, researchers may consider the construct misleading because Q-BIPOC men facing racism may also feel they do not want to disappoint their racial community, leading to behaviors and attitudes that mimic internalized homophobia, but are not the same (Robinson, 2008).

Intra-ethnic differences in the attitudes and perceptions towards Q-BIPOC men also may be more nuanced than previously thought. Among black college students, attitudes towards SM men can be best characterized by an absence of positivity, which is markedly different from their white peers' negative attitudes (Whitley et al., 2011). An important caveat to this finding is that black college students may also be situated in privilege within higher education and possibly higher SES and, therefore, less representative of the larger black community. A much larger study evaluating general perceptions of queer men within black communities reveal that although SM individuals are disapproved of at higher rates than they are disapproved of in a white sample, black communities are also more likely to support equal rights for LGBT people (Lewis, 2003). This paradoxical finding points to the possibility that although communities of color hold negative attitudes and beliefs towards SM men, they are less likely to advance those prejudices into discriminatory behaviors. It is also possible that heterosexism has become socially undesirable (similar to aversive racism in critical race theory literature; Feagin, 2013; Mio et al., 2016) to individuals with heterosexist biases, leading individuals to be defensive and unforthcoming in their self-report (Coffman et al., 2016). In a sample of LGBTQ Asian

Americans, participants reported more heterosexism in communities of color than in other communities, which uniquely contributed to psychological distress while holding racism, general heterosexism, and outness to friends/family constant (Szymanski & Sung, 2010). Thus, it certainly may be possible that although communities of color express heterosexism inconsistently (or with reservation) in comparison to white communities, the impact is felt more deeply for Q-BIPOC men when it does take place. This leads us to consider whether the impact of heterosexism is different for Q-BIPOC men than for white SM men. To understand why this may be the case, we must consider racism from both within SM communities and without.

Racism

Multicultural psychologists conceptualize racism as systemic, historical, and institutionalized behaviors and attitudes that are directed towards minority communities based on perceived race-based biological and cultural differences (Jones, 2000; Mio et al., 2012). As overt racism has become less and less socially accepted over time, it appears that covert forms of racism are more common (Mio et al., 2012). The dehumanizing and negative effects of covert racism on racial minorities are well documented (Paradies, 2015; Pieterse et al., 2010; Torres et al., 2012; for a review on physiological health see Paradies, 2006; Paradies et al., 2015; for a review on psychological health see Williams & Mohammed, 2009). Racially motivated and traumatic incidents, such as racial hate crimes (i.e., physical violence, murder, and threatening verbal assaults), are conceptualized as sources of trauma (Bryant-Davis & Ocampo, 2005; Carter, 2007) with the potential for long-term psychological effects that can span generations (Lev-Wiesel, 2007; Thomas, 2019).

One setting that is particularly unsettling is racism within health care, where provider prejudicial racial attitudes towards African American people has been linked to mistreatment of

black patients who experience pain (Hoffman et al., 2016). On college campuses, another setting with prevalent racism, perceptions of a negative racial climate are associated with post-traumatic stress symptoms for black and Asian students (Pieterse et al., 2010). It is interesting to note in Pieterse and colleagues' 2010 study that although both black and Asian students reported higher perceptions of negative racial climate on campus, those perceptions among black students were significantly more related to psychological distress than for both white and Asian students. It is also important to note that not all racism is overt or even obvious, and should instead be conceptualized as daily racial hassles, assumptions, and messages from others in the form of microaggressions (Mio et al., 2012; Sue et al., 2007). Although the effects of experiencing and perceiving racism are documented in the literature, many researchers also point to the process of internalization of racism as being particularly damaging to the psychological functioning of racial minorities (Hipolito-Delgado, 2010; Speight, 2007). Internalized racism is conceptualized as a byproduct of numerous, continual, and subtle microaggressions (David et al., 2018; Friedlaender, 2018; Sue et al., 2007), and is linked to reductions in self-esteem (Wong-Padoongpatt et al., 2017).

Relevant to the current study, experiencing racism has also been linked to symptoms of depression (Lowe et al., 2019; Schmitt et al., 2014; Torres & Vallejo, 2015; Wei et al., 2010). Specifically, racism-related stress has also been linked to depression and other variables of psychological distress in black men (Pieterse & Carter, 2007), Latinx adults (Chavez-Korell, & Torres, 2014), and Asian students (Wei et al., 2008). For Q-BIPOC men, racism can also manifest in the LGBT community and in the process of dating other men (Ghabrial, 2017; Balsam et al., 2011; Kudler, 2007). Using our conceptual frame as a guiding lens (see Figure 1), the possibility exists that Q-BIPOC men may not feel completely welcome in their ethnic/racial

communities due to heterosexism, or in their LGBT communities due to racism. Q-BIPOC men may have the perception that they do not completely belong to either group. As a result, healthy familial, social, and other interpersonal and ethnic/racial identity based coping strategies (Chavez-Korell & Torres, 2014; Finch & Vega, 2003) may not function for Q-BIPOC men as they may for populations holding only one marginalized identity (Ghabrial, 2017). Other data in a large Asian American sample show that regardless of social cohesion, experiencing recent racial discrimination predicted negative mental health symptoms (Gee et al., 2007). When considering the resulting negative affect and lack of healthy coping mechanisms for individuals facing overlapping oppressive forces of gender role conflict, heterosexism, and racism, we may be able to help explain the elevated rates of DE/EB in sexual and ethnic minority adolescents found by Austin (2013). The link between Q-BIPOC men and gender role conflict/heterosexism/racism with DE/EB has not been empirically investigated to date, despite the theoretical and conceptual evidence pointing to its importance. As a result, the current study is a significant contribution to the budding field of intersectionality research and clinical practice.

APPENDIX B
IRB APPROVAL

Date: 6-3-2021

IRB #: IRB-20-98

Title: An Exploration of Intersectional Minority Stress and Disordered Eating and Exercise Behaviors in Sexual Minority Men of Color

Creation Date: 2-2-2020

End Date:

Status: **Approved**

Principal Investigator: Patricia Kaminski

Review Board: UNT IRB Full Board

Sponsor:

Study History

Submission Type	Initial	Review Type	Expedited	Decision	Approved
Submission Type	Modification	Review Type	Expedited	Decision	Approved

Key Study Contacts

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APPENDIX C
ADVERTISEMENT

CALLING ALL Q-BIPOC CIS-MEN

**Complete a brief 15-20
minute survey for a
chance to win one of
three \$100 prizes**



APPENDIX D
SCREENING QUESTIONNAIRE

Thank you for your interest! Please answer the following questions to continue to the main survey.

What is your sex assigned at birth? (pick one)

- ☐ Male
- ☐ Female
- ☐ Wait and see/intersex

Which gender identity best describes you?

- ☐ Male
- ☐ Female
- ☐ Gender non-binary
- ☐ Gender fluid
- ☐ Transgender
- ☐ Unknown at this time
- ☐ Other

Please describe your gender identity

What is your age?

What country do you currently live in?

Do you currently, or have you ever, lived in the United States of America?

- ☐ Yes
- ☐ No

Which best describes your race or ethnicity in the US?

- ☐ Black/African American
- ☐ Latinx/Hispanic American
- ☐ White/European American
- ☐ Asian American
- ☐ Native American/Pacific Islander
- ☐ Bi-racial/Bi-ethnic or Multiracial/Multiethnic
- ☐ Other
- ☐ Non-American

Please write in your racial or ethnic identity/identities

Which best describes your sexual orientation?

- ☐ Strictly Heterosexual
- ☐ Mostly Heterosexual
- ☐ Both heterosexual and gay
- ☐ Mostly gay
- ☐ Strictly gay
- ☐ Asexual
- ☐ Pansexual
- ☐ Other

Please describe your sexual orientation.

APPENDIX E
INFORMED CONSENT



UNIVERSITY OF NORTH TEXAS®

Informed Consent Notice

TITLE OF RESEARCH STUDY: An Exploration of Intersectional Minority Stress and Disordered Eating and Exercise Behaviors in Sexual Minority Men of Color

RESEARCH TEAM: Principal Investigator: Patricia Kaminski, PhD., Department of Psychology, (940) 565-2671, patricia.kaminski@unt.edu. Student Investigator: Andrew Pereira, Department of Psychology, (940) 565-2671, andrew.pereira@unt.edu

This project is a dissertation being conducted under the supervision of Patricia Kaminski, PhD., Department of Psychology. She can be reached at (940) 565-2650, Patricia.Kaminski@unt.edu

You are being asked to participate in a research study. Taking part in this study is voluntary. The investigators will explain the study to you and will answer any questions you might have. It is your choice whether or not you take part in this study. If you agree to participate and then choose to withdraw from the study, that is your right, and your decision will not be held against you.

You are being asked to take part in a research study about experiences you may have due to your identities. The experiences I will ask you about relate to how you see your body, your eating behaviors, and issues relating to your gender, racial identity, and sexual orientation

Your participation in this research study involves responding to a brief online survey, lasting approximately 25 minutes. More details will be provided in the next section.

You might want to participate in this study if you would like to help researchers understand how to help sexual minority men of color who struggle with their body image, eating behaviors, and exercise behaviors. However, you might not want to participate in this study if you do not have 25 minutes worth of time to complete this survey in one sitting. You may also not wish to complete this survey if you have difficulty focusing on a task for 25 minutes.

You may choose to participate in this research study if you are 18 years old or older, speak English fluently, and identify as a non-white man.

The reasonable foreseeable risks or discomforts to you if you choose to take part is that you may experience psychological discomfort. The possible benefits may include increased insight into yourself and others, providing a voice for your community, and positive feelings from

helping researchers understand your community better. You may receive compensation for participation.

DETAILED INFORMATION ABOUT THIS RESEARCH STUDY: The following is more detailed information about this study, in addition to the information listed above.

PURPOSE OF THE STUDY: This research study is about experiences you may have due to your identities. The experiences I will ask you about relate to how you see your body, your eating behaviors, and what it is like for you to experience your gender, racial identity, and sexual orientation. The results of this study may help counselors better understand the experiences and attitudes of sexual minority men of color.

TIME COMMITMENT: Participation in this study is expected to last approximately 25 minutes.

STUDY PROCEDURES: When you begin the study, you will be asked for demographic information, such as your age, relationship status, and racial-ethnic identity. After providing this information you will be given a few brief surveys to answer. You may not pause the survey and continue later, so please plan ahead to devote approximately 25 minutes of your time to answer all the questions. You will be asked to answer questions about experiences due to your sexual and racial identity, body image, behaviors, thoughts, and feelings. You may skip any question you do not want to answer, but please complete as many questions as possible so that your answers can help with our research questions. At the end of the survey, you will be provided with a link to a separate form, where we will ask for how we can contact you or the charity you choose for the compensation drawing. You will also be provided a list of resources and the study will be completed.

POSSIBLE BENEFITS: After answering the survey questions, you may experience increased insight into yourself and others, such as how you felt in your relationships with others, your community, and your family. This study may also help you feel that you are providing a voice for your community and your experiences in it. You may also experience positive feelings from helping researchers understand your community better. We do not expect you to experience substantial psychological benefits for any length of time after completing the study.

POSSIBLE RISKS/DISCOMFORTS: This research study is not expected to pose any additional risks beyond what you would normally experience in your regular everyday life. However, if you do experience any discomfort, please inform the research team. Please remember you may end your participation at any time by closing the survey window.

Participation in this online survey involves risks to confidentiality similar to a person's everyday use of the internet and that there is always a risk of breach of confidentiality. Please be aware of your surroundings while taking this survey to protect yourself and your information.

Participating in research may involve a loss of privacy and the potential for a breach in confidentiality. Study data will be physically and electronically secured by the research team. As with any use of electronic means to store data, there is a risk of breach of data security.

If you experience excessive discomfort when completing the research activity, you may choose to stop participating at any time without penalty. The researchers will try to prevent any problem that could happen, but the study may involve risks to the participant, which are currently unforeseeable. UNT does not provide medical services, or financial assistance for emotional distress or injuries that might happen from participating in this research. If you need to discuss your discomfort further, please contact a mental health provider, or you may contact the researcher who will refer you to appropriate services. If your need is urgent, helpful resources include:

GLBT National Help Center
<http://www.glbtnationalhelpcenter.org>
Peer support, free telephone support

National Alliance on Mental Illness
<https://www.nami.org/Find-Support/LGBTQ>
Information and help on issues within LGBT communities

GLBT Near Me
<http://glbtnearme.org>
Explore to find local organizations, groups, and support for the GLBT community

Mental Health & Psychology Resources Online
<https://psychcentral.com/resources/>
Resource list for specific mental health issues, such as substance use, anxiety, and depression

National Suicide Prevention Lifeline
1-800-273-8255
Please call for immediate telephone support if you feel that you are currently in crisis.

COMPENSATION: Participants who complete this study will have the option to enter a drawing of three \$100.00 prizes. We will determine which participants will receive the prize at the end of the study using a random number generator. The approximate odds of being chosen are 1/82 to 1/246 depending on recruitment success. You may also choose to provide charity information instead of your own personal information, and we will send the prize to the charity identified if drawn at the end of the study.

If you are participating as part of coursework, there are no alternatives to completing this research study.

Informed Consent - Adults
Version: January 2020

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University of North Texas
IRB-20-98
Approved on 8-14-2020

CONFIDENTIALITY: Efforts will be made by the research team to keep your personal information private, including participation in this research study, and disclosure will be limited to people who have a need to review this information. All electronic data collected from this study will be stored in a secure location on the UNT campus and/or a secure UNT server for at least three (3) years past the end of this research. All personal identifiable information, stored only for the purpose of dispensing of compensation, will be kept separate from survey data, encrypted with a password, and placed on a password protected computer stored within a locked residence. The compensation data will be destroyed once disbursed. Deidentified survey data will be stored in a password protected computer maintained by trained research staff. Research records will be labeled with a code and will not be linked to personally identifiable information.

The results of this study may be published and/or presented without naming you as a participant. The data collected about you for this study may be used for future research studies that are not described in this consent form. If that occurs, all identifiable data, including any names or addresses, will be removed from the data.

While absolute confidentiality cannot be guaranteed, the research team will make every effort to protect the confidentiality of your records, as described here and to the extent permitted by law. In addition to the research team, the following entities may have access to your records, but only on a need-to-know basis: the U.S. Department of Health and Human Services, the FDA (federal regulating agencies), and the reviewing IRB.

This research uses a third party software called Qualtrics and is subject to the privacy policies of this software noted here: <https://www.qualtrics.com/privacy-statement/>

You may be asked to provide the names of other potential participants, but you have the right to decline this information. The research team will maintain confidentiality if you decide to suggest other persons for inclusion in the research.

CONTACT INFORMATION FOR QUESTIONS ABOUT THE STUDY: If you have any questions about the study you may contact Andrew Pereira, andrew.pereira@unt.edu, or Dr. Patricia L. Kaminski, Patricia.Kaminski@unt.edu. Any questions you have regarding your rights as a research subject, or complaints about the research may be directed to the Office of Research Integrity and Compliance at 940-565-4643, or by email at untirb@unt.edu.

CONSENT:

- Your digital consent indicates that you have read, or have had read to you all of the above.
- You confirm that you have read the possible benefits, risks, and/or discomforts of the study.

- You understand that you do not have to take part in this study and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- By signing, you are not waiving any of your legal rights.

If you agree to participate, please check the box in the next question, which will serve as your digital consent for voluntary participation. You may save a copy of this informed consent form for your records.

APPENDIX F

DEBRIEFING STATEMENT

Thank you for your time in this important study. For some, the questions in this survey may lead to insights and concerns that would be best explored with additional help. The following is a list of online resources for you to explore if needed, which includes online support groups, lists of mental health providers in your area, as well as telephone numbers for you to call for help.

GLBT National Help Center

<http://www.glbtnationalhelpcenter.org>

Peer support, free telephone support

National Alliance on Mental Illness

<https://www.nami.org/Find-Support/LGBTQ>

Information and help on issues within LGBT communities

GLBT Near Me

<http://glbtnearme.org>

Explore to find local organizations, groups, and support for the GLBT community

Mental Health & Psychology Resources Online

<https://psychcentral.com/resources/>

Resource list for specific mental health issues, such as substance use, anxiety, and depression

National Suicide Prevention Lifeline

1-800-273-8255

Please call for immediate telephone support if you feel that you are currently in crisis.

APPENDIX G
DEMOGRAPHIC QUESTIONNAIRE

What is your sex assigned at birth?

- ☐ Male
- ☐ Female
- ☐ Wait and see/intersex

Which best describes your gender identity?

- ☐ Male
- ☐ Female
- ☐ Gender non-binary
- ☐ Gender fluid
- ☐ Transgender
- ☐ Unknown at this time

What is your age?

Which best describes your race or ethnicity?

- ☐ Black/African American
- ☐ Latinx/Hispanic American
- ☐ White/European American
- ☐ Asian American
- ☐ Native American/Pacific Islander
- ☐ Biracial/Biethnic or Multiracial/Multiethnic
- ☐ Other (7)
- ☐ non-American (8)

Please write in your racial or ethnic identity/identities

What best describes your relationship status?

- ☐ Single (1)
- ☐ Non-exclusive dating (2)
- ☐ Exclusive dating (3)
- ☐ Open or poly-amorous relationship(s) (4)
- ☐ Monogamous relationship (5)

What is your monthly household income? (including unemployment benefits, disability, grants, stipends, social security, and other forms of financial assistance)

How many individuals, including yourself, live in your household and share the above income?

Please estimate your weight (in pounds)

Please estimate your height (in feet and inches)

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