

**Using structural equation modeling to examine eating disorder symptoms and their theoretical  
correlates among sexual minority men**

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## Introduction

Eating disorders (EDs) are serious psychiatric illnesses associated with high rates of morbidity and mortality (Smink et al., 2012). Evidence suggests a disproportionate and concerning rise in the prevalence of male EDs, as well as a stark increase in pathological eating behaviors among men in community samples (Lavender et al., 2017). Men with EDs are disproportionately likely to identify as sexual minorities (SM; i.e., gay, bisexual, queer, etc.) and present with symptoms that differ from their heterosexual male or female SM counterparts (Calzo et al., 2017). SM groups are more likely to be significantly burdened by the impact of an ED, but less likely to access needed mental and physical health care (Collins & Rocco, 2014; van Hoeken & Hoek, 2020). Therefore, improved understanding of mechanisms driving symptom presentations among this population is needed.

Two theoretical models, *minority stress theory* (Meyer, 2003) and *objectification theory* (Fredrickson & Roberts, 1997), have emerged to account for the elevated ED risk seen among SM men. *Minority stress theory* suggests that the increased discrimination and stigma that members of the SM community face create a detrimental environment which ultimately results in psychological dysfunction (Meyer, 2003). Consequently, disordered eating behaviors arise as a coping strategy to manage the negative emotional sequelae of minority stress (Grammer et al., 2021). According to *objectification theory*, women and their bodies become the subject of self-objectification, as a result of experiences of objectification from others, particularly men (Fredrickson & Roberts, 1997). This critical eye turned inward begets shame and anxiety, resulting in depression, sexual dysfunction, and eating pathology. *Objectification theory* applies readily to SM men, as they too are frequently subjected to objectification by other males. Disordered eating may then develop as men attempt to align their bodies with an idealized body image promoted by the SM community (Conner et al., 2004).

In the ED literature, there is strong evidence linking stress and negative affect to specific ED symptoms (Goldschmidt et al., 2014; Haynos et al., 2015). *Minority stress* may elucidate these symptoms among SM men, as stress incurs negative emotional states, resulting in affective eating patterns (i.e.,

increased restriction, binge eating, purging). *Objectification theory* research among SM men shows that they report higher levels of overall body dissatisfaction, which behaviorally results in muscularity-oriented behaviors and beliefs (Brewster et al., 2017). Among men who experience greater self-objectification, there may be a strong drive for an idealized, muscular body which brings about pathological exercise and muscle building behaviors and beliefs.

Even among continued research supporting *minority stress theory* and *objectification theory* in understanding ED pathology among SM men, adequate mechanistic understanding and treatment interventions remain lacking (Calzo et al., 2017). This may be due, in part, to the fact SM groups are frequently examined as one homogenous sample, with few studies looking into symptom nuances among SM groups (Bankoff et al., 2016). Insufficient statistical power may fuel this paucity of research, as SM groups are frequently subsamples of larger research studies (Semlyen, 2017). This places SM individuals, who often face barriers to healthcare due to their marginalized status, at an additional disadvantage as their symptoms may not be fully recognized or understood (Dahlhamer et al., 2016). To deliver culturally competent and informed care, providers must be informed of the ways in which SM present for treatment, and the implications of their driving theoretical factors.

## **Current Study**

The aim of this study is to identify patterns of eating pathology among a large sample of sexual minority men, and to elucidate the driving theoretical mechanisms underlying their symptoms.

## **Method**

### **Participants**

I will recruit a large sample (n = 400) of SM men with eating pathology via the online data collection website Prolific. They will complete a pre-screener for age, gender, sexual minority status, and eating disorder pathology using the Eating Disorders Examination Questionnaire version (EDE-Q; Fairburn, 2008). Consistent with previous community samples, the EDE-Q cutoff will be 2.3 to screen in

for the study (Mond et al., 2004). Participants must be 18 years or older. The proposed sample size for the study is considered “large,” which will ensure that all analyses are appropriately powered (Kline, 2005).

### **Procedure**

Study procedures will take place online. After completing the pre-screener, participants will be directed to a link where they will be asked to complete self-report questionnaires, for which they will be compensated \$0.25 per questionnaire.

### **Measures**

Participants will report general demographic information. Questionnaires will include: the Eating Pathology Symptoms Inventory (EPSI; Forbush et al., 2013), the Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000), the Male Body Attitudes Scale (MBAS; Tylka et al., 2005), the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), the Sociocultural Attitudes Toward Appearance Questionnaire-4-Revised-Male (SATAQ-4-R-M; Schaefer et al., 2017), the Objectified Body Consciousness Scale (OBS; McKinley & Hyde, 1996), the Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001), the Generalized Anxiety Disorder Scale-7 (GAD-7; Spitzer et al., 2006), and the Sexual Orientation Microaggressions Scale (SOMS; Nadal, 2019).

### **Statistical Analysis**

I will use structural equation modeling (SEM) using the lavaan package in RStudio (R Core Team, 2014; Rosseel, 2012) to examine the relationships between ED symptoms and their theoretical underpinnings among SM men. See Figure 1 for the proposed model. Four latent variables are expected to emerge in the model representing minority stress, objectification, affective eating behaviors, and muscularity-oriented attitudes and behaviors, respectively. First, the measurement model will be examined with no predictive paths included in the model, which will allow for overall assessment of latent variable fit and potential re-specification of latent variables. Second, the overall model fit will then be tested. Model fit will be examined by chi-square, CFI, TLI, and RMSEA. A non-significant chi-square

value will indicate that the model implied covariance matrix matches the actual covariance matrix. CFI and TLI cutoffs will be  $> .90$ , and RMSEA should be  $< .05$  to indicate maximum parsimony of the model. Indirect effects of the mediation pathway will be tested via bootstrapping using the bmem package in RStudio (Wang, 2020).

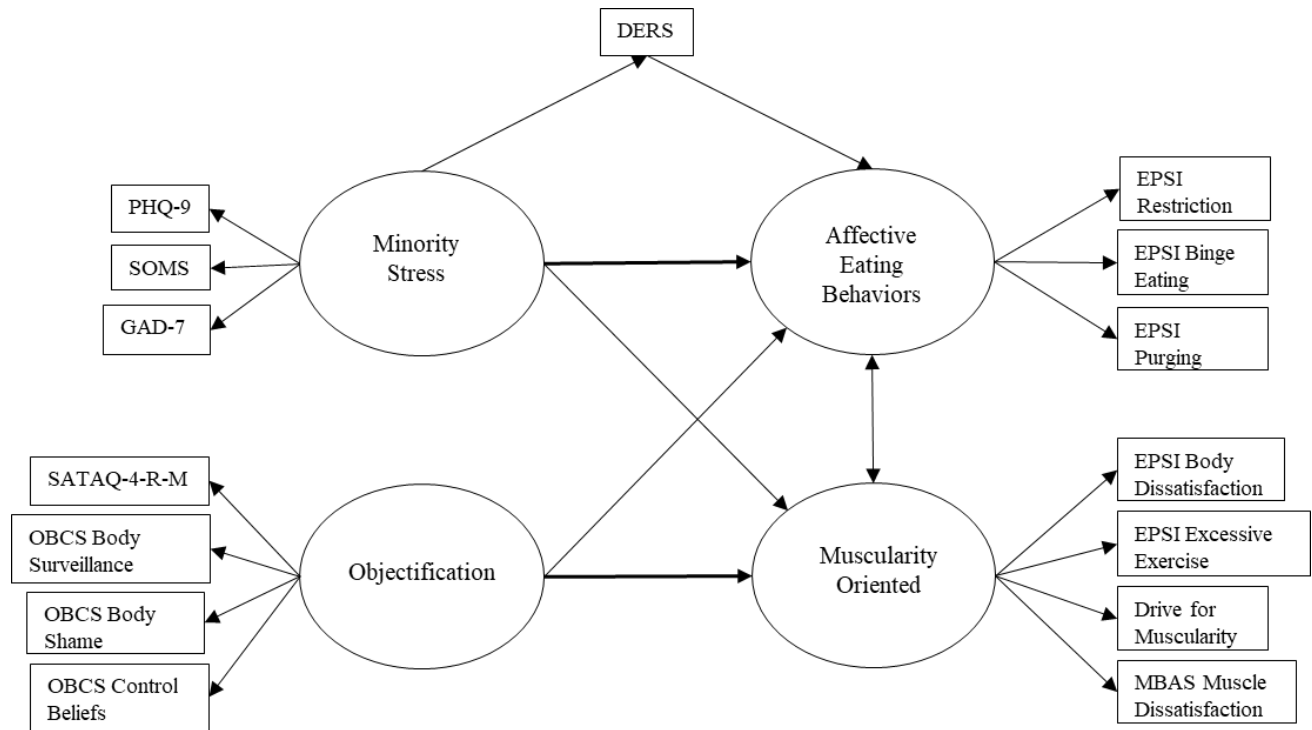


Fig. 1 Proposed Model

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