Eating pathology in sexual minority men: evaluating an objectification theory framework and the role of identity acceptance concerns

Joseph Michael Donahue
*University at Albany, State University of New York, jdonahue@albany.edu*

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Eating pathology in sexual minority men:
Evaluating an objectification theory framework and the role of identity acceptance concerns

By

Joseph M. Donahue

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Abstract

Research supports objectification theory as providing a framework for understanding how eating disturbances can develop in females. However, research among men—specifically sexual minority men who are disproportionally affected by such issues—is deficient. The current study sought to further assess whether the relations hypothesized by objectification theory were significant among sexual minority males. In addition, the current study explored the role of sexual orientation acceptance concerns as a moderating variable. To evaluate the current study’s aims, sexual minority males (N=208) were recruited online and asked to complete self-report measurements related to the objectification theory, eating pathology, and sexual orientation identity. Results of the subsequent mediation analysis suggest that positive relations between internalization of sociocultural standards of attractiveness and body shame partially mediated the relation between objectification experiences and eating disorder symptomatology. Additionally, results from moderated-mediation analyses reveal that sexual orientation acceptance concerns had a significant positive indirect effect with eating disorder symptomatology and internalization of sociocultural ideals of attractiveness. The current study provides further evidence to support an objectification theory framework to explain eating disorder symptomatology among sexual minority males. Furthermore, results extend this framework by highlighting the role of sexual identity acceptance concerns. In sum, these findings help to inform future research that aims to provide theoretically grounded approaches to studying and treating body image and eating-related disturbances among sexual minority males.

Keywords: eating disorders, body image, objectification theory, sexual minority
Introduction

Historically, eating disorders, body image disturbances and related issues have largely been examined through the lens of a female perspective (Grabe, Ward, & Hyde, 2008; Hoek & Van Hoeken, 2003). However, in recent decades there has been increased recognition that males are often affected by such issues (Raevuori, Keski-Rahkonen, & Hoek, 2014). Although eating and body image-related issues can affect anyone regardless of demographic characteristics, present research suggests a clear over-representation of such issues in sexual minority males (Hospers & Jansen, 2005; Jones & Morgan, 2010). In both community and clinical investigations of eating disorders and related symptomatology among men, those who identified as gay or bisexual consistently have disproportionately higher rates than their heterosexual counterparts (Carlat et al., 1997; Feldman & Meyer, 2007; Prepose, 1984). Consequently, some scholars in the field have described sexual minority status as a specific risk factor for body image and eating-related issues among men (Hospers & Jansen, 2005; Russel & Keel, 2002).

As the research suggests sexual minority men are at an elevated risk for body image disturbances and eating pathology, it is essential to explore possible mechanisms and pathways that may elucidate the relations between sexual minority status and these mental health issues. One plausible avenue to explain this relationship is through the concept of objectification theory. Established by Frederickson and Roberts (1997) as a way to explain increased rates of certain mental health concerns in females, objectification theory posits that modern culture socializes girls and women to view themselves as objects to be evaluated based on solely their physical appearance. Women internalize objectification experiences (e.g., hearing rude remarks about their bodies) which, in turn, results in an increased preoccupation with their own physical appearance. This increased body preoccupation can lead to increased body monitoring, body
shame, and deleterious mental health consequences, such as eating disorders pathology and related symptomatology (Fredrickson & Roberts, 1997; Moradi & Huang, 2008).

Although objectification theory was initially conceptualized as a way to explain the development of body image and eating disturbances in females, researchers have since adapted it for use in male populations. While there are clear differences in the ways in which men and women experience their bodies and the way they are evaluated based on their physical appearance, men are still exposed to a similar societal and cultural system that perpetuate unattainable body ideals. Thus, the sexual objectification framework may be deemed appropriate to explain eating pathology and related issues among men. Past work has explored the role of self-objectification in relation to men’s self-esteem, and motivation for exercise (Strelan & Hargreaves, 2005), as well as a way to explain disordered eating in both genders (Calogero, 2009; Tiggemann & Kuring, 2004). In addition, studies have begun to apply objectification theory to describe body image and eating disturbances specifically in sexual minority populations (e.g., Martins et al., 2001; Wiseman & Moradi, 2010).

Objectification theory has been widely researched and suggested as a plausible pathway for the development of eating and body image-related issues among women. While there is preliminary evidence to support the utility of sexual objectification theory to explain eating and body image disturbances among males (both heterosexual and sexual minority), it is far from conclusive. Similarly, there are a variety of variables (e.g., minority stress, externalized and internalized homophobia, and stigmatization) which may interact with the traditional sexual objectification theory to better explain this pathway.

**Increased Rates of Eating Disorders in Men**
Until relatively recently, the literature addressing body image disturbances, eating pathology, and related symptomatology has almost exclusively been viewed as a female issue, with scant research exploring these matters among men. The historical discrepancy in the literature looking at body image and eating related disturbances among men and women could exist for a multitude of reasons, including: reported prevalence rates for eating disorders significantly skewed by sex (Hudson et al., 2007); an emphasis placed on traditional gender roles and help-seeking stigma among males (Räisänen & Hunt, 2014); a lack of awareness and understanding among clinicians and researchers of eating disorders in males (Yager & Powers, 2008); and, a general misconception that males are somehow immune or not a high risk for developing such issues (McCabe & Ricciardelli, 2004).

Even though many of these beliefs and issues still persist in present day to a certain degree, there is a much wider recognition among clinicians, researchers, and the general public that these issues regularly affect men and deserve substantial attention and increased examination. Accordingly, scholars in the field have begun to define, measure, and treat body image and eating disturbances in a way that betters captures the male experience and more accurately captures rates of such issues among this population (Daniel & Bridges, 2009; Raevuori et al., 2014). Although recent years have witnessed a relative surge in research and a better understanding of eating disorder in males, recent prevalence statistics still report greater rates among females (Raevuori et al., 2014). Moreover, eating disorder prevalence rates have a considerably higher skewed sex distribution in comparison with other mental health issues (Pedersen, et al., 2014), which may further sustain the misconception that it is “female issue” and research concerning males is not warranted.
Research investigating eating disorders among males has estimated that lifetime prevalence rates for anorexia nervosa is 0.16-0.3% and for bulimia nervosa is 0.1-0.05% (Bulik et al., 2006; Hudson, Hiripi, Pope, & Kessler, 2009; Raevurori, et al., 2009; Woodside et al., 2001). The ratio of lifetime prevalence rate of anorexia nervosa and bulimia nervosa in males versus females is reported to be approximately 1:10 (Hoek, 2006). For binge eating disorder lifetime prevalence rates have been reported at 1.1-3.1% (Hudson et al., 2009; Striegel-Moore & Franko, 2003). In studies concerning prevalence rates for binge eating disorders, the male to female ratio is reported to be more equal (1:2-1:6) than other eating disorder subtypes. Thus, while there is an overrepresentation of females in eating disorder diagnoses, current research supports the notion that males are also affected by these issues.

Moreover, recent work suggests a trend of increasing rates of eating disorders and related issues among men. In one of the most thorough studies investigating prevalence rates among males in the general population, Woodside and colleagues (2001) reported the male-female ratio of eating disorder to be between 1:2 and 1:3. These estimates are substantially higher than earlier detailed studies to estimates that typically reported male-female ratios between 1:10 and 1:20. Similarly, another study investigating clinical admissions for eating disorders noted that males represented an increasing percentage of total admissions between the years of 1984 and 1997 (Braun, Sunday, Huang, & Halmi, 1999). Even more current research has similarly reported increased rates in eating disorder in males over the years (Raevuori et al., 2014). These findings also provide evidence that more males may be affected by these issues than demonstrated in earlier prevalence studies and that reported rates among this population is increasing.
An important consideration that may help to explain the disproportionate ratios between males and females relates to issues with clinical and research detection (Raevuroi et al., 2014). Due to the historical, clinical and research emphasis on eating disorders among females, the vast majority of assessments and severity measures employed were originally developed to best capture eating disorder and related symptomatology among women. Furthermore, these assessments and measures (e.g., the Eating Attitudes Test and the Eating Disorder Inventory) were validated and normed in females (Yager & Powers, 2008). As past work has demonstrated that men and women have different body image concerns and eating pathology (e.g., desired weights and body shapes; Furnham, Badmin, & Sneade, 2002), it is likely that previous research did not accurately describe and quantify these issues in males. In addition to affecting reported prevalence rates, this gap in the eating disorder literature has likely contributed to an under-diagnosis and under-treatment in males.

The release of revised Diagnostic and Statistical Manual of Mental Disorder, 5th edition (DSM-5; American Psychiatric Association, 2013) reflects a progression in the detection and assessment of eating disorders among males and can help to explain recent increases in reported rates of these issues among this population. In previous versions of the DSM, stringent eating disorder diagnostic criteria, which was more representative of female experiences with eating pathology, may have prevented males from being accurately captured in prevalence statistics. As eating disorder diagnostic criteria was initially developed through a female perspective, males with eating disorder symptomatology often did not fit neatly into diagnostic criteria. For example, past versions of the DSM diagnosed a disproportionate amount of males in the residual category of eating disorder not otherwise specified or characterized their eating pathology as subclinical (Raevuo et al., 2014).
However, in its most current edition, the DSM’s criteria for eating disorders has been expanded and refined in a way that is more receptive and inclusive of male eating disorder symptomatology. For instance, anorexia nervosa and bulimia nervosa diagnoses were modified in way that allowed more males to fit diagnoses (e.g., with the removal of amenorrhea as a criterion of anorexia nervosa and increased flexibility with weight criteria). Binge eating disorder, which had previously been included as a specifier for “eating disorder not otherwise specified,” was also included as a distinct diagnostic category. Moreover, criteria outlining the frequency of binges was also modified to a lower threshold, which has also increased the number of formal eating disorder diagnoses among males.

In addition to changes to diagnostic criteria to specific eating disorder categorizations, muscle dysmorphia was also included in the DSM-5 as a specifier for body dysmorphic disorder. As muscle dysmorphia better captures the body image concerns and disturbances found in males, its recognition as a formal diagnosis may better capture prevalence rates for this population. And, while body dysmorphic disorder with a muscle dysmorphia specifier is not classified as an eating disorder, its characteristics, comorbidities, and other features overlap greatly with eating disorder symptomatology (Strother, Lemberg, Stanford, & Truberville, 2012). In sum, the changes to diagnostic criteria in the DSM allow for more eating disorder symptomatology present in males to be identified as a specific diagnosis (i.e., anorexia nervosa, bulimia nervosa, or binge eating disorder). This may help to explain historically skewed prevalence rates by sex and the recent increase of the issues among this population.

**Eating Disorders among Sexual Minority Males**

While research has acknowledged that body image and eating disturbances occur in males at higher rates than previously reported, it has also identified a clear overrepresentation in
prevalence rates among those who identify as a sexual minority compared to those who do not identify as such (Hospers & Jansen, 2005; Jones & Morgan, 2010). This finding is consistent with other mental health disorders where studies have documented that sexual minorities (both males and females) are at a higher risk for depression, suicidal ideation, substance misuse, deliberate self-harm, and various other mental health and psychosocial issues than their heterosexual counterparts (Cochran, Sullivan, & Mays, 2003; King et al., 2008).

Recent data has suggested that lifetime prevalence rates of eating disorders in the United States are estimated at 8.7% (Hudson, Pope, & Kessler, 2007) with men constituting approximately 10% to 15% of these cases (Carlat et al., 1997; Woodside et al., 2001). Of the men who meet diagnostic criteria for an eating disorder, sexual minority men (i.e., those who identify as gay or bisexual) make up approximately 10%-42% of these cases (Carlat et al., 1997; Russel & Keel, 2002). A study conducted by Feldman and Meyer (2007) to estimate the prevalence of eating disorders in diverse sexual minority populations further supported past findings that suggest sexual minority males have significantly higher prevalence rates of these issues. The study, which sampled gay, lesbian, and bisexual women from community venues, found that there were no differences in eating disorder prevalence between lesbian, bisexual and heterosexual women. However, gay and bisexual men had meaningfully higher prevalence estimates of eating disorders than their heterosexual counterparts. Specifically, results indicated that sexual minority males had meaningfully higher rates across all full syndrome eating disorders (i.e., anorexia, bulimia nervosa, and binge eating disorder), as well as subclinical eating disorder symptomatology.

When examining rates of eating disorders and related symptomatology among sexual minorities, it is necessary to consider demographic characteristics of the general population to
understand the degree to which these issues affect this population specifically. Historically, it is has been difficult to estimate the number of individuals who identify as a sexual minority for a variety of reasons (e.g., sampling issues, measurement confounds, and socio-political constraints related to issues such as stigmatization and homophobia). Consequently, estimates have ranged widely from 1% to 10% (Seidman & Rieder, 1994; Spiegelhalter, 2015). Recent estimates from the largest and most representative sample of LGBT individuals collected in the United States estimate that 4.1% of adult Americans identify as a sexual minority (Gates, 2017). These findings, based on telephone interviews with a random sample of 1,626,773 adults in the United States, suggest that there is an increase in adults identifying as a sexual minority (compared to 3.5% of American adults in 2012). While demographic trends suggest that more people are identifying as a sexual minority, they still constitute a small proportion of the general population. Thus, when considering recent demographic of sexual orientation identification, it is evident that sexual minority males are a significantly overrepresented group among those with clinical and subclinical eating disorders and related symptomatology.

**Risk Factors for Eating Pathology in Sexual Minority Males**

As literature exploring eating pathology among sexual minority males is lacking in comparison to other populations (i.e., females), precise explanations for this group’s overrepresentation among reported cases is not fully understood. In recent years, researchers have posited various potential risk and protective factors to explain the relationship between sexual minority status and eating pathology. Body dissatisfaction, defined as the negative evaluation of one’s physical appearance, has been described as an important variable that may increase risk for eating pathology among sexual minority males (Boroughs & Thompson, 2002; Hopsers & Jensen, 2005). In addition to being associated with negative mental health
consequences such as depressive mood and low self-esteem (Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006), body dissatisfaction has also been consistently implicated in the development and maintenance of eating pathology (Stice & Shaw, 2002).

Sexual minority males report higher rates of body dissatisfaction compared to their heterosexual counterparts (Kimmel & Mahalik, 2005; Morrison, Morrison, & Sager, 2004). A recent study by Peplau and colleagues (2009) evaluated body dissatisfaction rates by sexual orientation in two large internet-based studies (Ns = 2,512 and 54,864). Results indicated that sexual minority men had less positive evaluations of their appearance, more preoccupation with their weight, and more negative effects of their body image on their quality of life than heterosexual males. Similarly, studies that have examined specific features of body dissatisfaction among sexual minority and heterosexual men have also found differences in body ideals and specific areas of dissatisfaction. For example, several studies found that sexual minority males described greater concerns about their body shape and size than heterosexual males, as well as an increased fear of becoming fat (Kaminski, Chapman, Haynes, & Own, 2005; Strong, Williamson, Netmeyer, & Geer, 2000).

Across genders and sexual orientations, body dissatisfaction has been linked to the internalization of sociocultural standards of attractiveness and pressures to adhere to them. Pressures to conform to sociocultural standards of attractiveness and its relation to body dissatisfaction have been well-studied in female populations, specifically in the context of the “thin-ideal” (Stice, 2002; Stice & Shaw, 2002; Thompson & Stice, 2001). However, research has also indicated that males are similarly affected by pressures to adhere to sociocultural standards of attractiveness (Harvey & Robinson, 2003). An experiment by Agliata and Tantleff-Dunn (2004) exposed male participants to television advertisements containing ideal male body images
or neutral images. Results revealed that participants exposed to the ideal images became significantly more depressed and reported higher levels of muscle dissatisfaction.

Among sexual minority males, several qualitative and quantitative studies suggest that there are aspects of “gay culture” that promote more unattainable body ideals and increased pressures to obtain them (Drummond, 2005; Duggan & McCreary, 2008; Epel, Spankos, Kasl-Godley, & Brownell, 1996). Research analyzing depictions of men in media oriented specifically to the gay community (e.g., magazines, advertisements, and websites) note an emphasis placed on physical attractiveness characterized by lean and muscular bodies (Lanzieri & Cook, 2013; Saucier & Caron, 2008). In addition, many of these depictions of the male physique are sexually themed or suggestive (Harvey & Robinson, 2003). And, while research has noted that all males are exposed to and influenced by sociocultural standards of attractiveness, there is evidence to support that sexual minority males are more prone to internalization of these ideals (Carper, Negy, & Tantleff-Dunn, 2010).

Explanations for differences between heterosexual and sexual minority males concerning the portrayal and internalization of sociocultural standards of attractiveness are limited. Some scholars theorize that the nature of same-sex relationships and the desire to attract a partner influences sexual minority males to place a greater emphasis on physical attractiveness. Citing research that men place greater value on physical features of their partners, Siever (1994) posited that sexual minority males and heterosexual women have similar concerns and goals (primarily aesthetic) when trying to attract males. In comparison, heterosexual men are more concerned with other factors that are typically more valued by potential female partners (e.g., stability). Additional research has identified the role of peer pressure as a potential explanation for differences among sexual orientation identification. A study by Hospers and Jansen (2005) found
that sexual minority males reported that their peers placed a significantly greater importance on physical attractiveness.

While research has not yet fully expounded the reasons differences exist in portrayals of sociocultural standards of attractiveness and pressures to conform, the implications of these issues have been noted in samples of both sexual minority and heterosexual males (Harvey & Robinson, 2003). Consequently, among sexual minority males, these amplified body ideals and associated pressures to conform are believed to promote greater levels of body dissatisfaction and, in turn, increased rates of eating disorder pathology and related symptomatology.

**Objectification Theory**

Another potential and more comprehensive explanation for increased eating pathology among sexual minority males is described through objectification theory. Although objectification theory was developed by Frederickson and Roberts (1997) to provide a framework for understanding how the experiences of females who live in cultures that objectify their bodies contribute to higher rates of psychosocial and mental health problems, it has since been modified for use in males with some research supporting its applicability. Broadly, the theory posits that individuals who live in sexually objectifying cultures may internalize the observers’ perspective through repetitive exposures to objectification experiences. Individuals will evaluate their bodies based on the degree that they conform to those internalized standards which, in turn, will lead to a variety of deleterious consequences.

Initial descriptions of this theory (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996) suggest that the objectification of women based on their appearance is widespread and pervasive in modern societies. Fredrickson and Roberts (1997) specifically described the objectification of women as “the experience of being treated as a body (or a collection of body
parts) valued predominantly for its use to (or consumption by) others” (p. 174). Objectification theory proposes that women commonly experience objectification through a variety of avenues, including media portrayals, sexualized interactions (both verbal and nonverbal), observations, and other sociocultural messages. Through repeated exposures to these objectification experiences, women internalize these messages and reduce their identity to focus primarily on physical features and view their own bodies as objects. Consequently, this will lead women to develop a variety of maladaptive behaviors and negative mental health outcomes.

Previous explorations of objectification theory have linked objectifying experiences with increased rates of depression, lower self-esteem, sexual dysfunction, and other mental health problems across several studies exploring these variables among women (Muehlenkamp & Saris-Baglama, 2002; Szymanski & Henning, 2007). Particularly pertinent to the current study, positive relations among sexual objectification theory variables (e.g., sexual objectification experiences, internalization of sociocultural standards of attractiveness, and body shame/dissatisfaction) are thought to be associated with increased eating disorder pathology. Since the inception of objectification theory, a multitude of research studies has supported associations between such objectification theory variables and eating pathology and related issues in females (for reviews, see Moradi & Huang, 2008; Tiggemann, 2011). Thus, research investigating the links between objectification theory variables and mental health consequences have provided a valuable theoretical framework to better understand why such issues (i.e., eating disorder pathology) have disproportionately higher rates among females.

Objectification Theory and Males

As objectification theory was originally developed to describe women’s experiences, it is imperative to recognize and fully consider gender differences in sociocultural standards of
attractiveness (e.g., the thin ideal commonly described in studies concerning body image among women), as well as traditional gender roles that are central to the original framework when applying it for use in males. In addition to lower rates of eating disorder pathology than females, previous investigations indicate that males also report lower levels of objectification experiences and its associated variables (e.g., body surveillance and body shame; Slater & Tiggemann, 2010). Evidently, there are noted differences between the ways in which males and females experience objectification within society, the ways in which they appraise their bodies, and prevalence rates for mental health issues such as eating disorders.

However, several scholars contend that there are also many similarities across genders in the relations between objectification theory variables and negative mental health outcomes (Moradi & Huang, 2008). While there is preliminary evidence to support the applicability of an objectification theory framework for studying such issues in males, the current body of research has yielded conflicting (Daniel & Bridges, 2010; Parent & Moradi, 2011; Slater & Tiggemann, 2010). Nevertheless, research concerning an objectification theory framework among males is comparatively limited to those exploring female populations. Thus, it may be the case that these limited and mixed results are related to assessment, conceptual, and methodological issues similar to factors that have impacted overall eating disorder research among males.

**Relevance of Objectification Theory in Sexual Minority Males**

Whereas evidence supporting the application of objectification theory among all males has thus far yielded conflicting results, some scholars propose that this framework may be more pertinent within the subgroup of those who identify as a sexual minority. Aforementioned research indicates that certain experiences of sexual minority males appear to better relate to those of females (e.g., unrealistic body ideals). Similarly, previously identified risk factors of
eating disorders among sexual minority males (e.g., higher levels body dissatisfaction and internalization of sociocultural ideals of attractiveness) fit well within an objectification theory framework. As a result, recent investigations have emerged using an objectification theory to explore increased rates of eating disorders and other mental health issues in sexual minority males.

Although there is evidence to support the particular relevance of objectification theory in this population, there have been relatively few studies that have specifically explored these relations within sexual minority male samples. Studies examining objectification variables in males have typically reported differences based on sexual orientation. For example, a study by Martin and colleagues (2007) replicated findings from an unpublished dissertation and found that sexual minority males reported higher levels of self-objectification, body surveillance, body dissatisfaction, and drive for thinness compared with heterosexual men. While these results describe differences in levels based on sexual orientation status, the pattern of correlations among the variables for sexual minority males was consistent with objectification theory. That is, self-objectification, body surveillance, and body shame were correlated positively with each other; and, body surveillance and body shame were correlated positively with body dissatisfaction and eating disorder symptomatology.

Wiseman and Moradi (2010) further tested the applicability of an objectification theory framework to explain body image concerns and eating disorder symptoms in sexual minority males. The cross-sectional study recruited 231 sexual minority males from various online groups (e.g., MySpace and Yahoo) and had them complete a survey with items assessing sexual objectification experiences, internalization of attractiveness ideals, body surveillance, body shame, and eating disorders symptoms. Results from a subsequent path analysis were consistent
with relations established with objectification theory. Specifically, positive relations were observed from sexual objectification experiences to internalization of attractiveness, body surveillance, body shame, and eating disorder symptoms.

Few experimental studies exploring objectification theory among sexual minority males exist. One experiment by Martins and colleagues (2007) created a sexually objectifying experience in order to better study these relations among men. Researchers randomly assigned participants to either wear a speedo or a sweater while standing in front of a full length mirror. While men of both sexual orientation groups experienced higher levels of body surveillance, only sexual minorities reported higher body shame. Moreover, sexual minority males exhibited more restrictive eating behaviors after being induced with the objectifying experience. In this study, restrictive eating was measured with a mock taste test of snack foods after the induction.

Additional research in the field has explored media content geared towards sexual minorities using an objectification framework. A recent study examining content published on a website oriented to gay males, found that the majority of images featured idealized body types (i.e., very low levels of body fat and very high levels of muscularity; Schwartz & Grimm, 2016). Moreover, user comments related to these images were often objectifying. Results from this content analysis not only support the notion that sexual minority males are exposed to highly idealized body types, but also that they are commonly exposed to objectifying experiences (i.e., user comments).

Unique Considerations for Sexual Minority Males

While the current body of research provides support for the notion that objectification theory is a relevant framework for exploring eating pathology among sexual minority males, replications of initial findings and additional research is needed. Furthermore, in addition to
objectification theory variables that have been traditionally associated with increased risk for eating disorder pathology, there are several variables unique to sexual minority males that need to be considered and tested within this framework. As research has identified sexual minorities are at higher risk for a variety of mental health issues (Cochran et al., 2003; King et al., 2008), there has been increased attention placed on identifying risk and protective factors for this population.

Researchers have proposed that various factors related to minority stress (e.g.,

externalized and internalized homophobia, acceptance issues, and stigmatization) have tremendous impacts on mental and physical health outcomes (Mayock, Bran, Carr, & Kitching, 2008). For example, a prospective study concerning sexual minority adolescents reported that family acceptance was associated with a variety of positive physical and mental health outcomes in young adulthood (Ryan, Rulls, Huebner, Diaz, & Sanchez, 2010). Results indicated that family acceptance of sexual minority adolescents predicted greater self-esteem, social support, and general health status as young adults. Additionally, it protected against depression, substance abuse, and suicidal ideation and behaviors. Other issues unique to sexual minorities reported to impact various physical and mental health outcomes include: bullying, lack of institutional protections, and family rejection (for a review, see Russel & Fish, 2016).

Considering the current body of objectification literature exploring eating disorder pathology among males is already limited, very few studies have explored variables unique to sexual minority males that may impact the relations posited by the framework. In their test of objectification theory in eating disorder symptoms among sexual minority males, Wiseman and Moradi (2010) further extended the framework by incorporating variables relating to internalized homophobia and childhood harassment. In addition to supporting the applicability of
objectification theory, the study also highlighted the importance of including variables unique to sexual minority experiences. Results indicated that internalized homophobia was related to eating disorder symptoms through body shame and childhood harassment was linked with eating disorder symptoms through internalization of attractiveness ideals, body surveillance, and body shame.

While these findings by Wiseman and Moradi represent an advancement in the field of objectification theory research, additional investigations are needed to evaluate if other variables related to the unique experiences of sexual minorities are relevant to the framework. As previous research concerning sexual minority populations has identified many potential risk and protective factors for various physical and mental health outcomes (Mayock et al., 2008; Russel & Fish, 2016), it is conceivable that they could also impact the relations posited by objectification theory to better describe eating disorder symptomatology among sexual minority males.

Aims of the Current Study

Objectification theory has been well-studied within the literature, and findings from existing investigations suggest that it confers risk for body image disturbance and eating pathology in women. However, the existing body of literature exploring body image and eating disturbances among men—specifically sexual minority men who are disproportionately affected by such issues—is insufficient. While a limited number of studies have utilized a sexual objectification framework to explore body image and weight-related issues among this population, additional research is needed to replicate and extend existing findings. Accordingly, the present study seeks to address the limited research on the development of eating and body image disturbances among sexual minority males by further testing the applicability of a sexual
objectification theory framework. In addition, the current study explored the role of a variable unique to sexual minorities (sexual orientation acceptance concerns) within the context of this framework.

Specifically, the present study hypothesized that elevated objectification experiences, internalization of sociocultural standards of attractiveness, and body shame would be associated with higher eating pathology among self-identified sexual minority males (see Figure 1 for a conceptual model of the hypothesized relations). Furthermore, the current study hypothesized that this relationship would be moderated by sexual orientation acceptance concerns. The inclusion of this variable would affect the hypothesized model such that sexual minority men who indicate that they are more uncomfortable with others knowing their sexual orientation would moderate the relations between objectification theory variables and eating disorder symptomatology.

Method

Participants

Participants in the current study were males (N=223) who self-identified as a sexual minority (i.e. gay/homosexual, bisexual, or queer) and who were 18 years of age or older. Individuals who indicated they were younger than 18 years old were excluded from the study. The majority of participants self-identified as gay/homosexual (59.1%) while those who identified as bisexual (36.1%) or queer (4.3%) represented a smaller portion of individuals who completed the survey. The average participant age was 31.2 years old (with a range of 18 to 67 years of age at the time of completing the study). In addition, the current study limited responses to individuals residing in the United States and who had a functional competency of the English language. The majority of participants identified as White/Caucasian (76.4%); however other
racial and ethnic identities were represented in the sample (Asian, 8.7%; Black/African American, 6.3%; Latino/Hispanic, 3.4%; Other, 5.2%).

Additional demographic data was not collected for this study. However, data collection methods from Amazon Mechanical Turk (an online recruitment platform that was utilized by the current study and described in greater detail below) suggest diversity across several other demographic fields, such as income and education level (Chandler & Shapiro, 2016; Paolacci & Chandler, 2014; Ross, Zaldivar, Irani, & Tomlinson, 2009).

Procedure

Prior to collecting data, the present study and its associated materials were approved by the Institutional Review Board at the University at Albany, State University of New York. Participants were recruited online through Amazon’s Mechanical Turk, a data collection service that is commonly utilized by researchers across various disciplines (MTurk; www.mturk.com). MTurk is an internet-based crowdsourcing platform that offers individuals from the community compensation for the completion of various online tasks. Through MTurk and similar internet data collection services, “requesters” (e.g., researchers) post advertisements for HITs (Human Intelligence Tasks, such as surveys, questionnaires, and internet-based experiments). The platform allows “workers” (i.e., individuals who have registered and been verified through MTurk) to view these advertisements which they can choose to complete in exchange for a predetermined compensation (typically monetary). MTurk workers are able to search and complete tasks at their own will and are not obligated to complete tasks in which they do not wish.

In the present study, participants clicked on a study advertisement through MTurk’s homepage and were brought to an external online survey consisting of an informed consent page,
followed by several measures related to body image, eating behaviors, sexual orientation/identity, and objectification theory variables (e.g., objectification experiences, internalization of cultural standards of attractiveness, and body shame). In order to obtain data exclusively from sexual minority men, individuals who clicked on the MTurk posting were asked screening questions (i.e., sexual orientation, gender identity), which excluded workers who identified as heterosexual or female. Participants averaged 30 minutes to complete the survey. At the end of the survey, participants were given a validation code to enter on MTurk to receive compensation for their time. Internet Protocol (IP) addresses were evaluated by researchers following data collection to protect against duplicate responders. In addition, to further ensure quality of data MTurk workers who had a satisfaction rating (determined by requesters who rated the workers previous submissions based on completeness, consistency, etc.) below 70% were excluded from participating in the current study.

While research suggests that MTurk samples differ, on average, from the general population in several ways (e.g., participants are younger, more liberal, and more educated), this service offers a fast, convenient, and cost-effective way to collect large sample sizes that are more diverse than what are typically available to researchers (Paolacci & Chandler, 2014; Chandler & Shapiro, 2016). As many researchers are limited to recruiting participants from research pools within their respective universities, MTurk offers the ability to sample participants from the community that may be more representative on several demographic categories. Although critics of internet-based recruiting for research studies contend that such methods may yield inferior and less reliable data, studies have concluded that MTurk participants are equally honest and consistent in their responses as participants taken from other convenience sampling methods (Chandler & Shapiro, 2016; Horton, 2011).
Furthermore, many scholars not only accept but recommend internet-based data collection methods for recruiting difficult and hard-to-reach populations, such as individuals who identify as a sexual minority (Riggle, Rostosky, & Reedy, 2005; Moradi, Mohr, Worthington, & Fassinger, 2009). Due to issues such as stigma, external and internalized homophobia, and disenfranchisement, sexual minority individuals may not be willing to disclose their sexual orientation to researchers or otherwise participate in research traditional settings as their heterosexual counterparts (Meyer & Wilson, 2009; Moradi et al., 2009). Moreover, as sexual minority individuals constitute a relatively small proportion of the general population (recent estimates range from less than 1.2% to 5.6%; Gates, 2011) even large samples taken from the general population will yield small numbers of non-heterosexual participants, which will impact the ability to draw statistically meaningful conclusions. Thus, internet data collection services, such as MTurk, offer a viable and effective alternative for researchers to increase the participation of such hard-to-reach populations (Smith et al., 2015), as well as individuals with specific psychiatric symptoms (e.g., eating pathology) that are not readily found in the general population (Shapiro, Chandler, & Mueller, 2013).

Measures

Objectification Experiences. The Interpersonal Sexual Objectification Scale (ISOS; Kozee et al., 2007) was used to assess participants’ objectification experiences (e.g., “How often have you heard rude, sexual remarks made about your body?”). The ISOS is a 15-item measure where items are rated on a 5-point Likert scale ranging from 1 (never) to 5 (almost always). A total score is calculated for this measure, as well as scores for two subscales: Body Evaluation (referring to participants’ experiences of other people evaluating his or her bodies) and Unwanted Explicit Sexual Advances (referring to participants’ exposure to such experiences
from other people). The ISOS was initially created for use in measuring sexual objectification experiences among women and has demonstrated validity and reliability. While primarily utilized in female populations, a study in which an adapted version of the ISOS has was used in men reported adequate internal consistency and psychometric properties (Engeln-Maddox et al., 2011). In the present study, participants’ total score of the ISOS was used in analyses, which yielded a Cronbach’s alpha of .95, indicating excellent internal consistency.

**Internalization of sociocultural standards of attractiveness.** The Internalization subscale of the Sociocultural Attitudes towards Appearance Questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995) was used to assess the level of internalization of cultural standards of attractiveness among participants in the current study. The SATAQ is a 14-item measure used to assess the degree to which an individual recognizes, accepts, and internalizes sociocultural appearance standards (e.g., “I wish I looked like an underwear model.”) The SATAQ was originally created to measure internalization of cultural standards of attractiveness among women, but has been since been modified by researchers and used with men in research that has supported its validity (Wiseman & Moradi, 2010; Cashel, Cunningham, Landeros, Cokley, & Muhammad, 2003). The eight-item internalization subscale is rated on a 5-point continuum from 1 (completely disagree) to 5 (completely agree). Participants’ ratings on each of the subscale items were averaged to compute a total score with higher scores indicating increased internalization of cultural standards. The Cronbach’s alpha of the current sample was .88, which indicates good internal consistency.

**Body Shame.** The Body Shame subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) was used to measure the degree of shame participants have towards their bodies. The OBCS is a 24-item self-report measure of body consciousness with
three subscales. The OBCS is rated by participants on a 7-point continuum from 1 (strongly disagree) to 7 (strongly disagree). The 8-item Body Shame subscale measures whether participants believe they are shameful or bad because they do not meet cultural standards of what a body should look like. Sample items from the Body Shame subscale include: “When I can’t control my weight, I feel like something must be wrong with me” and “When I am not exercising enough, I question whether or not I am a good enough person.” After reverse coding relevant items per the author’s instructions (McKinley & Hyde, 1996), participants’ scores on the subscale were averaged to create a total score with higher scores indicating higher body shame. The current sample yielded a Cronbach’s alpha of .80, which indicates good internal consistency.

**Sexual Orientation Acceptance Concerns.** Participants’ level of sexual orientation concerns was assessed using the Acceptance Concerns subscale of the Lesbian, Gay, & Bisexual Identity Scale (LGBIS; Mohr & Kendra, 2012). The LGBIS is a 27-item measure designed to assess eight dimensions of lesbian, gay, and bisexual identity and is rated on 6-point continuum from 1 (disagree strongly) to 6 (agree strongly). The Acceptance Concerns scale assesses how insecure participants feel due to their sexual orientation, as well as how concerned they feel about how others view their sexual orientation. Items used to assess this construct include: “I think a lot about how my sexual orientation affects the way people see me” and “I can’t feel comfortable knowing others judge me negatively for my sexual orientation.” The Cronbach’s alpha for the current sample was .78 indicating adequate internal consistency of this scale.

**Eating Disorder Symptomatology.** The Eating Disorder Examination Question (EDE-Q; Fairburn & Beglin, 1994, 2008) was used to assess participants’ level of eating disorder symptomatology. The EDE-Q is a 28-item self-report questionnaire version of the Eating Disorder Examination (EDE), a well-established, structured clinical interview with strong
psychometric properties (Fairburn and Cooper, 1993). While the measure can be utilized in clinical populations, it is particularly useful in assessing disordered eating attitudes and behaviors over the previous 28 days in community samples. The EDE-Q is comprised four subscales (Restraint, Eating Concern, Shape Concern, and Weight Concern) where item responses are rated on a 7-point scale with higher scores reflecting greater levels of eating-related pathology. In addition, a Global Score is calculated by averaging the scores from the four subscales. The current study utilized the EDE-Q Global Score in analyses as a marker of participants’ overall level of eating disorder symptomatology. The Cronbach’s alpha for the EDE-Q Global in the present sample was .88 denoting good internal consistency.

Demographic Information. Participant demographic characteristics including sexual orientation, gender identity, racial and ethnic background, and age were collected at the end of the survey questionnaire. In addition, participants self-reported their current height and weight, which was used to determine their Body Mass Index (BMI). Participants’ BMIs were calculated using the Centers for Disease Control and Prevention formula: \[\text{BMI} = \frac{\text{Weight in pounds}}{\text{height in inches}^2} \times 703\]. Past research has indicated that participant self-reports of current height and weights is accurate (Spencer, Appleby, Davey, & Key, 2002) and, thus, appropriate to use when calculating BMIs.

Statistical Analyses

Prior to all statistical analyses, data were screened for univariate and multivariate normality as recommended (Tabachnick & Fidel, 2001). All variables demonstrated acceptable normality and data conformed to the assumptions of the analyses conducted. Cases that did not meet inclusion criteria (i.e., participants who identified as heterosexual or female) were excluded from the analyses. In addition, data was excluded for participants for whom 20% or more
responses were missing on any given measure, producing a final sample size of \( N = 208 \). The remaining participants’ data was analyzed to determine the nature of the missing data. Analyses indicated that the data was missing completely at random (MCAR). Subsequently, an Expectation-Maximization (EM) imputation was conducted to address the remaining missing data cases. While there are several available options to deal with missing data, EM imputation is considered an adequate solution for missing data when it is determined to be MCAR, and there may be issues with power for tests of hypotheses (Cheema, 2014). Associations between all variables were gauged using Pearson’s partial correlations.

After preliminary descriptive and correlation analyses were run, statistical analyses for the present study’s main hypotheses were conducted using the PROCESS macro for SPSS (Hayes, 2013). All variables were mean centered and tests of differences for the direct and indirect effects were based on 95% confidence intervals derived from 1,000 bootstrap coefficient estimates. To test the current study’s first hypothesis that objectification theory creates a pathway to increased eating disorder symptomatology, a serial multiple mediation was conducted in PROCESS (Model 6). According to objectification theory, the sequence of variables (internalization of sociocultural standards of attractiveness and body shame) is thought to mediate the relationship between sexual objectification experiences and eating pathology and were thus entered accordingly.

The present study’s second hypothesis explored the significance of a moderating variable on the abovementioned mediation model. This moderated-mediation model was tested using PROCESS (Model 8) with the sexual orientation acceptance concerns entered as the moderating variable. The current analyses tested the study’s hypothesis that sexual orientation concerns would moderate the role of objectification theory variables on eating disorder symptomatology.
Furthermore, to provide a more rigorous test of the present study’s main hypotheses, body mass index (BMI) was explored as a potential confounding or interacting variable. As past research has indicated that BMI and eating disorder symptomatology often co-vary, the current study deemed it necessary to include this variable in analyses (Stice, 2002).

**Results**

**Descriptive Statistics and Preliminary Analyses**

The relations among the study variables of interest, as well as BMI, were examined using Pearson correlations. The results were consistent with the current study’s hypotheses. As evidenced in Table 1, positive relations among objectification experiences, internalization of cultural standards of attractiveness, body surveillance, and eating disorder symptomatology were present in the current sample such that higher scores of the objectification theory variables were related to greater symptomology. These variables (objectification experiences, internalization of cultural standards of attractiveness, body surveillance, and eating disorder symptomatology) also correlated positively with sexual orientation acceptance concerns. BMI was significantly correlated with objectification experiences ($r = -.21, p < .05$), body shame ($r = .22, p < .05$), and eating disorder symptomatology ($r = .30, p < .05$), but was not significantly correlated with objectification experiences or sexual orientation acceptance concerns.

BMI scores ($M = 26.68, SD = 6.39$) as calculated from self-report height and weights indicated that participants were reflective of reported prevalence rates of healthy weight, overweight, and obesity of adult males in the United States (US Department of Health and Human Services, 2011). In addition, EDE-Q Global scores ($M = 0.84, SD = 0.89$) indicated that, on average, participants reported experiencing eating disorder symptomatology marginally less than past studies reporting normative data for males in community samples ($M = 1.09, SD = \ldots$)
Mediation Analysis

The results of the subsequent mediation analysis to test the pathway of relations based on the Objectification Theory framework are shown graphically in Figure 2. The overall model was significant, $R = .43$, $R^2 = .18$, $F(2, 205) = 23.03$, $p < .01$, indicating that the variables of interest accounted for 18% of the variance in eating disorder symptomatology. In addition, the model accounted for 5% of the variance in the internalization of sociocultural standards of attractiveness, 33% of the variance in body surveillance, and 51% of the variance in eating disorder symptomatology.

As depicted in Figure 1, the majority of path coefficients between the variables of interests were significant. The exception was the direct effect between sexual objectification experiences and body shame, which was not significant. Objectification experiences had significant direct effects on internalization of sociocultural standards of attraction and eating disorder symptomatology as evidenced by confidence intervals that do not overlap with 0. Internalization of cultural standards of attractiveness had direct effects on body shame and eating disorder symptomatology. Similarly, body shame had a significant direct effect on eating disorder symptomatology. Coefficients, standard error, $p$-values, and confidence intervals for the variables of interest are listed in Table 1.

In addition, the tests of the indirect relations between the variables of interests were consistent with the study’s hypothesis. The total indirect effect of the model was significant, $b = .15$, 95% CI: (.08, .23). A significant indirect effect was detected between sexual objectification experiences and eating disorder symptomatology through internalization of sociocultural
standards of attractiveness, \( b = .05, 95\% \text{ CI: (.02, .10)} \), as well as between objectification experiences and eating disorder symptomatology through body shame, \( b = .05, 95\% \text{ CI: (.01, .10)} \). Furthermore, objectification experiences also had significant positive indirect relations with eating disorder symptomatology through the internalization of sociocultural standards of attractiveness and body shame, \( b = .05, 95\% \text{ CI: (.02, .10)} \).

These indirect relations indicated a partial mediation due to the fact that direct relations between several variables were non-zero and statistically significant. Specifically, direct relations between internalization of cultural standards of attractiveness and eating disorder symptomatology, as well as relations between sexual objectification experiences and eating disorder symptomatology were non-zero and statistically significant as evidenced in Table 2. Thus, analyses from the present study suggest that eating disorder symptomatology is partially explained by the positive relations between objectification experiences, internalization of sociocultural standards of attractiveness and body shame.

**Moderated Mediation Analysis**

The effect of the moderator on the relationship between Objectification Theory variables and eating disorder symptomatology yielded several significant effects as listed in Table 3. Specifically, positive significant effects were noted between sexual objectification experiences and eating disorder symptomatology, body shame and eating disorder symptomatology, and internalization of sociocultural standards of attractiveness and eating disorders. Sexual orientation acceptance concerns had significant, positive direct effects on internalization, body shame, and eating disorder symptomatology. Although significant in the current study’s initial mediation model, direct effects between sexual objectification experiences and internalization were nonsignificant in the moderated mediation model. The interaction term (between sexual
objectification experiences and sexual orientation acceptance concerns) yielded a significant
direct effect on eating disorder symptomatology. A graphical representation of the direct effects
among objectification theory variables with the inclusion of sexual orientation acceptance
concerns as a moderating variable is depicted in Figure 3.

As noted by Hayes (2012), when testing the significance of a moderated mediation,
emphasis should be placed on estimating the conditional direct and indirect effects of X on Y
(through M). In the current analyses, the conditional direct effect of sexual objectification
experiences on eating disorder symptomatology revealed significant relations at values of the
moderator. Participants with elevated levels of sexual orientation acceptance concerns had
significant positive conditional direct effects between sexual objectification experiences and
eating disorder symptomatology, \( b = .25 \), 95% CI: (.123, .380).

In addition, consistent with the study’s second hypothesis, sexual orientation acceptance
concerns had a significant positive indirect effect with eating disorder symptomatology through
internalization of sociocultural ideals of attractiveness, \( b = .03 \), 95% CI: (.002, .090); however,
conditional indirect effects through body shame were nonsignificant. The nature of the
significant conditional indirect effect varies as a function of the level of sexual orientation
acceptance concerns such that only participants with elevated levels of acceptance concerns had
significant, positive effects on internalization of sociocultural standards of attractiveness.

**Discussion**

Research concerning eating disorders and related symptomatology has largely focused on
female populations. However, recent work has identified that males—and, in particular, sexual
minority males—are often affected by these issues. As there has been substantial evidence to
support the notion that that eating disorders occur at disproportionately higher rates in sexual
minority males (Carlat et al., 1997; Prepose, 1984), current research has prioritized the identification of factors that may confer risk for or protection from the development of eating disorders amongst this group. Objectification theory offers one framework for the identification of risk and protective factors for eating disorders and it has been well studied in female populations. While a number of studies have suggested that objectification theory may also be an appropriate framework for understanding eating disorders among sexual minority males, the current body of literature remains limited. The present study further examined the extent to which the hypothesized pathways in objectification theory accounted for significant variance in eating disorder symptomatology among a sample of sexual minority males.

The first aim of the current study was to replicate existing findings that suggest objectification theory as an appropriate framework for describing potential risk and protective factors for eating disorder and body image disturbances in sexual minority men. To evaluate this aim, a serial path model was used to explore if sexual orientation acceptance concerns moderated the relationships between objectification theory variables and eating disorder symptomatology.

Results from the present study align with past research that supports an objectification theory framework to describe eating disorders among women (e.g., Moradi et al., 2005; Noll & Frederickson, 1998) and among sexual minority males (e.g., Wiseman & Moradi, 2010). Outcomes from the current mediation analysis revealed relations among variables that were consistent with these past explorations of objectification theory. Objectification theory variables (i.e., objectification experiences, internalization of sociocultural standards, and body shame) were positively related in such a way to create partial mediation model to describe the presence of eating disorder symptomatology in the current sample of sexual minority males. Within this set of positive relations, internalization of cultural standards of attractiveness mediated the link
between objectification experiences and body shame. In addition, body shame mediated the link of internalization of sociocultural standards of attractiveness and eating disorder symptomatology.

The positive relations between objectification experiences, internalization of sociocultural standards of attractiveness, body shame, and eating disorder pathology indicated a partial mediation due to the fact that direct relations between several variables were non-zero and statistically significant. Specifically, direct relations between internalization of cultural standards of attractiveness and eating disorder symptomatology, as well as relations between sexual objectification experiences and eating disorder symptomatology were statistically significant and non-zero. Thus, findings from the present study suggest that variability in eating disorder symptomatology is partially accounted for by objectification experiences, internalization of sociocultural standards of attractiveness, and body shame.

While the outcomes from the current analyses did not indicate a complete mediation, they highlight the importance of objectification variables in describing the occurrence of eating disorder symptomatology among sexual minority males. These findings further suggest the need to reduce objectification experiences of sexual minority as a means to alleviate and prevent eating disorder symptomatology. As research from objectification theory among women has already suggested, practical ways to reduce objectification experiences could be accomplished in part an increasing the general public’s understanding of the way in which these variables interact to increase risk for eating disorder and related symptomatology. Additionally, public education campaigns that aim to expand ideals of attractiveness and reduce the sexual objectification of sexual minority males have also been proposed as ways to reduce these issues (Wiseman & Moradi, 2010). In addition, these results can inform clinical intervention, as it may be useful to
incorporate objectification theory variables (e.g., objectification experiences, internalization of sociocultural standards of attractiveness) into treatment procedures to more fully address the experiences of sexual minority males at risk for or who are currently endorsing body image or eating concerns.

Additional findings from this study highlight the importance of sexual orientation acceptance concerns in the context of eating disorder symptomatology among sexual minority males. As issues related to acceptance and rejection have been implicated as factors affecting other health outcomes among sexual minorities (Russel & Fish, 2016; Ryan et al., 2010), the current study provided evidence of its applicability in describing eating disorder pathology within an objectification framework. Specifically, sexual orientation acceptance concerns were linked to eating disorder symptomatology through a positive set of relations involving internalization of cultural standards of attractiveness and body shame.

The addition of this moderating variable also made the relation between sexual objectification experiences and internalization of sociocultural standards of attractiveness statistically nonsignificant. While the current findings do not reflect a full moderation effect, the conditional direct and indirect effects of X on Y at values of the moderator suggest unique relations. The nature of the conditional indirect effect varies as a function of the level of sexual orientation acceptance concerns such that only participants with elevated levels of acceptance concerns had significant, positive effects on internalization of sociocultural standards of attractiveness. While there was a similar positive effect on body shame at levels of the moderator were present, they were not statistically significant.

Accordingly, these results suggest that the variable of sexual orientation acceptance warrants further research to more precisely explain its relation to the objectification theory
variables and eating disorder symptomatology. Sexual orientation acceptance concerns had significant direct effects on internalization of cultural standards of attractiveness, body shame, and eating disorder symptomatology in the model posited by the current study. These positive, significant effects suggest the importance of sexual orientation acceptance concerns when considering eating disorder symptomology. The current study suggests that sexual minority males with increased acceptance concerns are at higher risk for eating disorder symptomatology. In practice, these findings suggest the importance of attending to clients’ level of sexual orientation acceptance concerns and assessing the extent to which such concerns are linked with clients’ internalization of sociocultural standards of attractiveness.

**Limitations and Future Directions**

There are several limitations of the current study that should be considered when interpreting the results. First, given limited sample size, the current study did not examine specific sexual orientations separately (e.g., gay/homosexual, bisexual, queer). As past research has suggested that there may be differences among specific sexual minority identification in regards to the experience and rates of certain mental health issues (Kertzner et al., 2009; Mustanski, Garofalo, & Emerson, 2010), the current study would have benefited from exploring if these nuances existed in the proposed framework. Accordingly, caution should be implemented if attempting to generalize the current findings to all men who identify as a sexual minority and subsequent research should consider this factor when designing and implementing studies.

Furthermore, the recruitment strategy used by the current study and other sample characteristics also limit the generalizability of the findings. While internet recruitment methods, such as Amazon Mechanical Turk, have several advantages (e.g., efficiency, cost-effectiveness,
and the ability to access hard to reach populations), they also limit participation to individuals who have access to an internet-enabled computer and who use that specific online platform. In addition, the current sample identified as predominantly White, which may also impact the representativeness of the results. Future studies should evaluate the relations investigated in the present study in samples of males that are more diverse in terms of race, ethnicity, sexual orientation identification, and other demographic characteristics.

Another limitation of this study relates to the questionnaires utilized. In general, there has historically been a lack of well-validated measures for use among sexual minority populations (Sell, 1997; Wheeler, 2003). These methodological issues not only concern assessment of sexual orientation and related constructs, but also to variables concerning general mental health and its correlates. Additionally, past research has identified that men and women have different body image concerns (Furnham, Badmin, & Sneade, 2002) and are exposed to different sociocultural ideals regarding attractiveness (Anderson & DiDomenico, 1992). The overall lack of research concerning male body image disturbances and eating pathology creates challenges in adequately operationalizing and measuring constructs. Consequently, as the majority of the objectification measures were developed to explain eating and body image disturbances among females, it may be the case that the adapted versions do not fully or accurately capture this phenomenon in men—and even more specifically, in sexual minority men.

While the measures used in the current study have previously been utilized in samples of males and have generated meaningful and psychometrically-sound results, there is ample room for advancement in measurements to more accurately capture men’s experiences with body image concerns, eating pathology, and objectification theory variables (Wiseman & Moradi,
As there is very limited theoretically grounded research about the development of body image disturbances in sexual minority men, more comprehensive research is needed to adapt frameworks to this population and develop measures that adequately operationalize and measure related constructs.

A final consideration of the current study concerns the cross-sectional nature of the data. Although cross-sectional data can provide valuable information for further research and provide evidence for a theoretical framework, it does not describe causality. Additional work should incorporate experimental and longitudinal research designs in order to test causal and temporal relations among the variables investigated by the current cross-sectional study.

In addition to addressing the limitations of the current study, forthcoming work in this field must aim to expand understanding of body image and eating-related disturbances among sexual minority males using theoretically-grounded and methodologically sound research designs similar to those that have already been conducted in studies examining these concerns among female populations. Whereas such research will be useful in better understanding the development and maintenance of such pathologies in sexual minority males, it may also help to better comprehend the roles of such variables (e.g., objectification theory) more generally.

Moreover, additional factors must be considered when examining eating disorder symptomatology and related issues among sexual minority males. Whereas sexual orientation acceptance concerns were explored as a potential moderating variable in the current study, past research has identified a multitude of other variables unique to sexual minority populations (e.g., internalized and externalized homophobia, LGBT community involvement, and identity centrality) that may serve as risk or protective factors in the development of body image disturbances and eating pathology.
Conclusions

Although objectification theory has been identified as a plausible framework for understanding body image disturbances and eating pathology in female populations, research examining these relations among males—and, in particular, those who identify as a sexual minority—is limited. The current study provides additional support for the use of a sexual objectification framework in describing the development of eating disorder pathology in sexual minority men. Results of the current mediation analysis suggest that positive relations between internalization of sociocultural standards of attractiveness and body shame partially mediated the relation between objectification experiences and eating disorder symptomatology. Additionally, the current study evaluated the role of sexual orientation acceptance concerns within this framework. Results indicated that acceptance concerns had a significant positive indirect effect with eating disorder symptomatology and internalization of sociocultural ideals of attractiveness. These relations reflect a unique relation and highlight the necessity of incorporating such constructs when conducting research specific to sexual minority populations.

In applied terms, these finding point to a greater need to challenge and reduce objectification experiences among sexual minority men as a way for preventing body image concerns, eating pathology, and its related consequences. Additionally, issues unique to sexual minorities, such as sexual orientation acceptance concerns, should be fully considered among individuals experiencing such issues. Future research should incorporate additional risk and protective factors that may better elucidate this phenomenon in this population, as well as examine variables prospectively or experimentally to better determine causal and temporal relations.
References


Ross, J., Zaldivar, A., Irani, L., & Tomlinson, B. (2009). Who are the turkers? worker demographics in Amazon Mechanical Turk. Department of Informatics, University of California, Irvine, USA/


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<th>3</th>
<th>4</th>
<th>5</th>
<th>M</th>
<th>SD</th>
<th>α</th>
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<td></td>
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Note: N = 208. Higher scores indicate higher levels of the construct assessed through the variable.
* p < .05
Table 2

Direct and indirect relations among variables of interest.

<table>
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<td>.081, .357</td>
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<td>3. SO—BS—ED</td>
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<td>.03</td>
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Table 3

Effects of the Moderator on the relationships between Objectification Theory variables and eating disorder symptomatology.

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<th>Coefficient</th>
<th>SE</th>
<th>p</th>
<th>LLCI, ULCI</th>
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</thead>
<tbody>
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<td>.15</td>
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<td>BS—ED</td>
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<tr>
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<td>INX—ED</td>
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<td>&lt;.01</td>
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Conditional Direct Effects of X on Y at Values of the Moderator

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<tr>
<th>Value of AC</th>
<th>Effect</th>
<th>Boot SE</th>
<th>Boot LLCI, ULCI</th>
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<td>-.03</td>
<td>.09</td>
<td>-.208, .143</td>
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Conditional Indirect Effects of X on Y at Values of the Moderator

<table>
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<th>Effect</th>
<th>Boot SE</th>
<th>Boot LLCI ,ULCI</th>
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<td>.03</td>
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<td>.02</td>
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<tr>
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<td>BS (1.00)</td>
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</table>

Note: INX represents the interaction term of objectification experiences (SO) and sexual orientation acceptance concerns (AC).
Figure 1. Conceptual model of hypothesized relations.
* indicates significance

Figure 2. Path model of direct effects among variables of interest. Indirect effects are implied in this model, but are not explicitly listed. Values reflect standardized coefficients. Dashed lines indicated non-significant paths.
* indicates significance

Figure 3. Model of direct effects among objectification theory variables with inclusion sexual orientation acceptance concerns (AC) as a moderating variable. Indirect effects are implied in this model, but are not explicitly listed. Values reflect standardized coefficients. Dashed lines indicated non-significant paths.