

Integrating minority stress theory and the tripartite influence model: A model of eating disordered behavior in sexual minority young adults

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ABSTRACT

Eating disorders are serious mental illnesses associated with high mortality rates and health complications. Prior research has found increased rates of eating pathology in sexual minority (SM; e.g., lesbian, gay, bisexual) individuals compared to sexual majority (i.e., heterosexual) individuals. Two prominent models have potential to explain these differences: the tripartite influence model and minority stress theory. While both models separately have promise for explaining the pathway of eating disordered behavior in SM individuals, research has indicated that both models have unexplained variance. Therefore, a comprehensive, integrative model could further explain unique variance. 479 men and 483 women between 18 and 30 years old were recruited through Qualtrics; all participants endorsed attraction to same-gender partners. Two models were estimated by gender using structural equation modeling. For men and women, community involvement accelerated the positive association of heterosexist discrimination with internalized homophobia. Minority stressors were associated with dissatisfaction and muscularity behavior, indicating the importance of incorporating minority stress. For women, community involvement accelerated both the association of pressures with muscularity internalization and the association of muscularity-based dissatisfaction with muscle building behaviors. If confirmed by prospective studies, this model could help refine prevention and intervention efforts with this vulnerable population.

1. Introduction

Eating disorders, and associated eating disordered behaviors, are a serious mental health concern with significant life-threatening medical and psychiatric morbidity and lower quality of life (Ágh et al., 2016; Arcelus, Mitchell, Wales, & Nielsen, 2011; Klump, Bulik, Kaye, Treasure, & Tyson, 2009; Mitchell & Crow, 2006). Indeed, mortality rates for eating disorders are among the highest rates for all psychiatric disorders (Arcelus et al., 2011). Disordered eating can affect individuals regardless of sociodemographic characteristics; however, risk for eating pathology is disproportionately higher for some groups.

1.1. Eating pathology in sexual minority individuals

One group at particular risk for eating pathology is sexual minority (SM) individuals (Calzo, Blashill, Brown, & Argenal, 2017), which includes gay, lesbian, bisexual, and other non-heterosexual individuals,

individuals who report same-gender attraction, and/or individuals who report having same-gender sexual contact (Institute of Medicine, 2011). Recent evidence suggests that SM individuals are at increased risk for body image concerns and eating pathology in comparison to their heterosexual peers (Alvy, 2013; Calzo et al., 2017; Feldman & Meyer, 2007; Frederick & Essayli, 2016). SM men (SMM) are shown to have higher rates of eating disorders (Diemer, Grant, Munn-Chernoff, Patterson, & Duncan, 2015; Matthews-Ewald, Zullig, & Ward, 2014), and are consistently at greater risk for eating disorder symptomatology such as body image concerns, binge eating, restrictive dieting, and anabolic steroid misuse (Blashill, Calzo, Griffiths, & Murray, 2017; Calzo, Corliss, Blood, Field, & Austin, 2013; Frederick & Essayli, 2016; Matthews-Ewald et al., 2014) compared with heterosexual men. Evidence of eating disorder risk among SM women (SMW) is less conclusive (Feldman & Meyer, 2007; Matthews-Ewald et al., 2014). A recent systematic review found that SMW have higher rates of eating disorders, binge eating, and purging behavior, but lower body dissatisfaction and drive for thinness,

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Table 1
Demographics of the sample.

Characteristic	Total (N = 962)	Men (n = 479)	Women (n = 483)
	N (%)	N (%)	N (%)
Sexual Identity			
Gay/Lesbian	336 (34.9)	239 (49.9)	97 (20.1)
Bisexual	564 (58.6)	206 (43.0)	358 (74.1)
Asexual	20 (2.1)	10 (2.1)	10 (2.1)
Other ^a	42 (4.4)	24 (5.0)	18 (3.7)
Sexual Attraction			
Only Same Sex	295 (30.7)	203 (42.4)	92 (19.0)
Mostly Same Sex	142 (14.8)	89 (18.6)	53 (11.0)
Equally Opposite and Same Sex	525 (54.6)	187 (39.0)	338 (70.0)
Race^b			
White	371 (38.6)	184 (38.4)	187 (38.7)
Black/African American	294 (30.6)	146 (30.5)	148 (30.6)
Native American/American Indian	23 (2.4)	13 (2.7)	10 (2.1)
Asian/Pacific Islander	272 (28.3)	134 (28.0)	138 (28.6)
Ethnicity			
Hispanic/Latino	234 (24.3)	120 (25.1)	114 (23.6)
Non-Hispanic/Latino	728 (75.7)	359 (74.9)	369 (76.4)

^a Other reported sexual identities included pansexual, panromantic, omnisexual, demisexual, queer, and straight.

^b Two men (0.4% of the sample) did not report race.

compared with heterosexual women (Meneguzzo et al., 2018). Some studies (Feldman & Meyer, 2007; Matthews-Ewald et al., 2014; Morrison, Morrison, & Sager, 2004; Peplau et al., 2009) report little to no differences between SMW and heterosexual women on body image concerns and eating disorder prevalence. Other studies have speculated that SM status may even be protective against eating disorder symptomatology in women (Gettelman & Thompson, 1993; Huxley, Halliwell, & Clarke, 2015; Lakkis, Ricciardelli, & Williams, 1999), although research only partially supports this idea. Despite these inconsistent findings among SMW, evidence largely indicates that SM individuals overall are at elevated risk for developing disordered eating behavior. Understanding the underlying theoretical mechanisms of elevated eating disorder risk for SM individuals through examination of etiological models is essential to understand this differential risk and, subsequently, inform future effective prevention and intervention programs.

1.2. Sociocultural models

Sociocultural theories offer a framework for understanding how dominant sociocultural influences contribute to body image concerns and disordered eating (e.g., Tiggemann, 2011, pp. 12–19). One model that has received considerable attention is the tripartite influence model (Thompson, Covert, & Stormer, 1999; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), which proposes that pressure from family, friends, and the media to conform to dominant sociocultural appearance ideals leads to body dissatisfaction and restrained eating via internalization of the thin ideal and social appearance comparison. Later modifications of the model included a fourth source of pressure called “significant others” which includes pressure from romantic partners, teachers, and coaches to achieve appearance ideals (thus a “quadripartite” model that includes pressures from four sources; Schaefer, Hariger, Heinberg, Soderberg, & Thompson, 2017). This model has received widespread empirical support with samples of primarily heterosexual women (e.g., Girard, Chabrol, & Rodgers, 2018; Hazzard et al., 2019; Johnson, Edwards, & Gidycz, 2015; Lovering, Rodgers, George, & Franko, 2018), and modified versions of the model for the development of muscle-building behaviors and dual body image pathways representing both muscularity and body fat dissatisfaction have received some support with samples of primarily heterosexual men

(Karazsia & Crowther, 2009; Tylka, 2011). Researchers have recently begun to explore the model with gay men and lesbian/bisexual samples (Hazzard et al., 2019; Huxley et al., 2015; Tylka & Andorka, 2012), with research providing preliminary support for these extended models. Therefore, sociocultural models have promise for explaining the contribution of culture to body image concerns and eating disordered behaviors in SM individuals. However, previous research has found that existing sociocultural models do not explain all variance in disordered eating and muscle-building behaviors. For instance, the tripartite influence model in gay men explained 33.5% of the variance in muscle-building behaviors and 47.1% of the variance in disordered eating behaviors (Tylka & Andorka, 2012). Therefore, there is still additional variance to be explained beyond that found in previous sociocultural models.

1.3. Minority stress models

Researchers have also begun to integrate aspects of minority stress theory (Meyer, 1995, 2003), a prominent model for the development of negative physical and mental health outcomes for SM individuals, into the tripartite influence model. Minority stress theory posits that SM groups experience increased levels of stigma-related stress associated with their minority status, which can lead to higher rates of psychopathology, including disordered eating. The theory delineates distal stressors (e.g., discrimination, prejudice, stereotypes) and proximal stressors (e.g., internalized homophobia, expectations of rejection, concealment), as both distinct stressors and interdependent processes (Meyer, 2003). Some minority stressors have been included in models of disordered eating for SM populations, including internalized homophobia (Bayer, Robert-McComb, Clopton, & Reich, 2017; Swearingen, 2006; Torres, 2008; Wang & Borders, 2017), sexual orientation concealment (Mason & Lewis, 2015), and heterosexual discrimination (Katz-Wise et al., 2015; Mason & Lewis, 2016; Mason, Lewis, & Heron, 2017; Watson, Velez, Brownfield, & Flores, 2016), with recent evidence supporting the association between these stressors and eating pathology. Taken together, this body of research suggests that minority stress variables are important contributors to eating disorder risk among SM groups and should be considered in examination of eating disorder models. However, reported variance explained in disordered eating ranged from 17.4% to 38% (Mason et al., 2017; Mason & Lewis, 2015, 2016; Watson et al., 2016), indicating that minority stress may not completely explain eating disorder risk in this population.

Within the minority stress model in lesbian, gay and bisexual populations (Meyer, 2003), SM community involvement is considered a key moderating factor of negative physical and mental health outcomes, such that the SM community serves as a source of social support and coping that can ameliorate the adverse effects of minority stress. However, prior research has found that community involvement was positively related to muscularity enhancement behaviors, both directly and indirectly through internalization of the mesomorphic ideal and appearance comparison, suggesting that community involvement may promote gay men’s engagement in muscularity-driven behaviors (Tylka & Andorka, 2012). Other research among SM groups found that community involvement may not be protective against negative outcomes, and was associated with higher disordered eating symptoms (Convertino, Brady, Albright, Gonzales IV, & Blashill, 2021; Davids & Green, 2011; Feldman & Meyer, 2007) and body dissatisfaction (Beren, Hayden, Wilfley, & Grilo, 1996; Davids & Green, 2011; Davids, Watson, Nilsson, & Marszalek, 2015), supporting the finding that community involvement may actually place SM individuals at greater risk for eating disorders.

A plausible alternative explanation for these findings might be provided by intraminority stress theory (Pachankis et al., 2020). This theory states that gay and bisexual men perceive status-based competitive pressures from within the community through their interactions with other SMM, including appearance-based pressures, which contribute to

adverse mental health outcomes. It is therefore possible that community involvement may be associated with negative outcomes for SM community members. Prior research has identified similar processes in SMW, such that women who perceived they were falling short of community standards of appearance were at higher risk for depression and anxiety (Boyle & Omoto, 2014). However, the extent to which intra-minority stress theory holds for SMW is unclear.

1.4. Current study

Despite promising advances in SM mental health research, and recent improvements made to the tripartite influence model to include SM-specific variables, key differences in eating disorder risk that are defined by sexual orientation remain unexplained. While existing evidence shows that the tripartite influence model and variables included in the minority stress model have promise for explaining eating disorder risk in SM individuals, no existing study, to our knowledge, has tested these theories in an integrated model. Therefore, the integration of these theories in a comprehensive model for disordered eating in SM individuals could further explain unique variance, and may help to better clarify eating disorder disparities. In the current paper, we build on this initial evidence to explore a comprehensive, integrated model combining the tripartite influence model (Thompson, Coovert, et al., 1999; Thompson et al., 1999) and minority stress theory (Meyer, 1995, 2003) to explain eating pathology in SM young adults.

1.4.1. Aims and hypotheses

The aim of the present study was to test an integrated model for eating disordered behavior among samples of SMM and SMW, by integrating the tripartite influence model and minority stress theory (see Fig. 1). The current study provides a meaningful contribution to the examination of models for eating disorder risk in SM young adults in a number of ways. First, in line with recent extensions of the tripartite influence model to better represent appearance ideals for men and women that are both thin and muscular (Girard et al., 2018; Hazzard et al., 2019; Hoffmann & Warschburger, 2019; Rodgers, Ganchou, Franko, & Chabrol, 2012; Tylka, 2011; Tylka & Andorka, 2012), we explored dual body image pathways to represent both thinness- and muscularity-based concerns. Second, we integrated minority stress theory variables (i.e., SM community involvement, internalized

homophobia, sexual orientation concealment, heterosexist discrimination) within the tripartite influence model to assess eating disorder risk unique to SM young adults. This study is the first to empirically test a comprehensive integration of these two prominent risk models for eating disordered behavior in SM young adults. In doing so, we build on previous research on the health disparities between SM individuals and their non-SM counterparts (e.g., Plöderl & Tremblay, 2015). Third, we explored SM community involvement as a key moderating variable within our model, integrating these two theories. This is consistent with the pathways proposed in the minority stress model and subsequent tests of this model showing that community involvement may moderate the association between minority stressors and negative physical and mental health outcomes (Beren et al., 1996; Davids et al., 2015; Meyer, 2003). To examine this moderation, we utilized latent interaction modeling to better understand the associations between community involvement and variables within the minority stress and tripartite influence models, as theorized by the minority stress model (Meyer, 2003). Unlike more typical methods of examining interactions, examining latent interactions provides the opportunity to control for measurement error in explanatory variables, which affords greater power to detect interaction effects when they exist (Bollen, 1989). This approach provides a novel addition to the literature of the association of community involvement with mental health outcomes, which has been largely unclear. Finally, we examined two eating disordered behavior variables (i.e., dietary restraint and muscle building behaviors) which may help to inform future transdiagnostic eating disorder interventions for SM groups.

The following hypotheses were made:

H1. Our integrated tripartite influence model and minority stress model would provide good fit to the data, separately for SMM and SMW. We expected sources of appearance pressure (i.e., family, peer, significant others, media) to load onto a latent pressures factor, which would be associated with both thin- and muscular-ideal internalization. We expected that thin- and muscular-ideal internalization would be associated with both thinness- and muscularity-based dissatisfaction, and further, that both thinness- and muscularity-based dissatisfaction would, in turn, be associated with our two examined eating disordered behavior variables (i.e., dietary restraint and muscle building behaviors). In line with previous research on the tripartite influence model (e.g., Hazzard et al., 2019; Huxley et al., 2015; Tylka, 2011) and in the interest of both

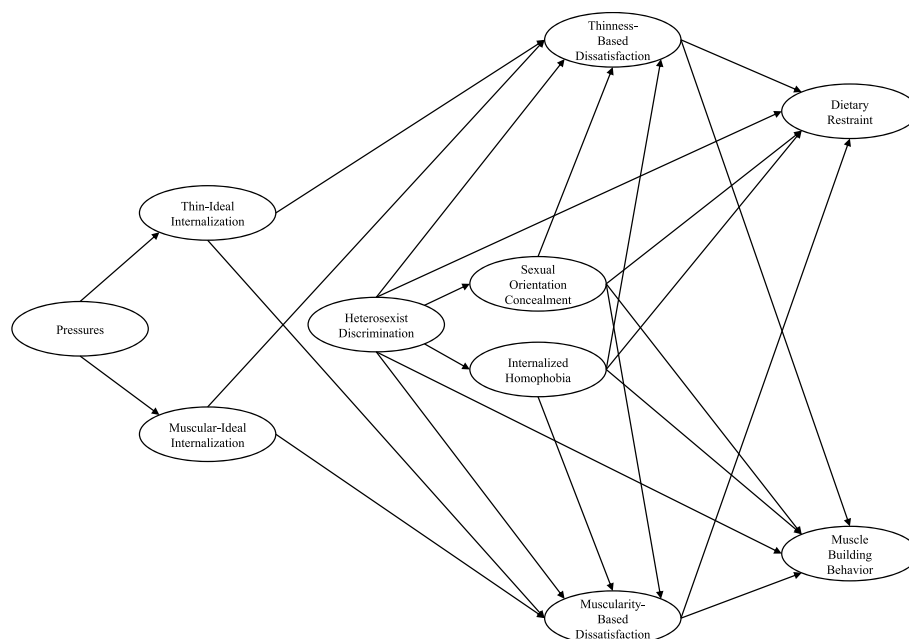


Fig. 1. Theoretical integrated model of eating pathology in sexual minority men and women.

comprehensiveness and parimony, we included internalization of appearance ideals but not social comparisons.

H2. As predicted by minority stress theory, distal stressors (i.e., heterosexist discrimination) were expected to be associated with proximal stressors (i.e., internalized homophobia and sexual orientation concealment), such that greater number of heterosexist experiences would be associated with greater internalization of negative societal attitudes and sexual orientation concealment. Together, these minority stressors were expected to be associated with greater negative outcomes (i.e., appearance-based dissatisfaction variables and eating disordered behavior variables). Further, we expected sexual orientation concealment and internalized homophobia to be associated with greater eating disordered behavior variables both directly and indirectly through appearance-based dissatisfaction variables.

H3. To integrate the tripartite influence model and minority stress theory, we expected SM community involvement to moderate the associations between pressures and internalization of appearance ideals, and between appearance-based dissatisfaction and eating disordered behavior variables. We also expected SM community involvement to moderate the association between heterosexist discrimination and both sexual orientation concealment and internalized homophobia. Based on the aforementioned theories indicating contradictory hypotheses for the association between community involvement and disordered eating, no directional hypotheses were generated regarding the simple slopes of these interaction terms.

2. Method

2.1. Participants and procedures

Participants were 483 SMW and 479 SMM aged 18–30 years ($M_{age} = 23.7$, $SD = 3.7$) recruited from across the United States through Panels, a service provided by Qualtrics, an online survey-based software company. Individuals can create an account through Qualtrics and participate in surveys if they meet criteria set by a researcher/s. Participants who were: 1) between the ages of 18–30 years old; 2) self-identify as gay/lesbian/bisexual; 3) self-identify as i) African American, ii) Non-Hispanic White, iii) Asian American/Pacific Islander, iv) Native American/Alaska Native, or v) Hispanic with any other race; and 4) English speaking based on their Qualtrics profile, were invited to participate in the study. Following consent, participants completed a pre-screener to confirm eligibility, then completed a 15–20 min survey. Participants received the equivalent of \$4 US dollars in e-reward currency that can be redeemed within Qualtrics for gift cards or airline miles. All procedures were reviewed and approved by the university's Institutional Review Board. This dataset has been reported previously (Gonzales IV & Blashill, 2021); however, the other article is primarily focused on reporting race and ethnicity group differences in eating disorders, body dysmorphic disorder, drive for muscularity, and appearance- and performance-enhancing drug misuse. The current study is unique in that it tested a full structural model of eating disorder behavior.

2.2. Measures

2.2.1. Demographics

Sexual identity was assessed using a single, close-ended item, "How would you describe your sexual identity?" with response options: *Lesbian/Gay, Bisexual, Heterosexual, Asexual, I prefer not to specify*, and *Other* where individuals were provided with an open-ended response option. Ethnicity was assessed using a single, closed-ended item, "What is your ethnicity?" with response options: *Hispanic/Latino* or *Not Hispanic/Latino*. Race was assessed using a single, closed-ended item, "What is your race?" with response options: *White, Black or African American, Native American or American Indian*, and *Asian/Pacific Islander*.

2.2.2. Pressures

Sociocultural pressures to achieve the body ideal were measured using the Pressures subscales of the Sociocultural Attitudes Towards Appearance Questionnaire 4-Revised (SATAQ-4R; Schaefer et al., 2017), including Family, Peers, Significant Others, and Media. Items were scored on a 5-point scale ranging from 1 (*definitely disagree*) to 5 (*definitely agree*), with higher scores indicating greater pressures. Previous studies have found an internal consistency range of the pressures subscales of $\alpha = .89$ – 0.96 in men and $\alpha = .92$ – 0.96 in women (Schaefer et al., 2017). The SATAQ-4R has been previously validated in SMM and SMW (Convertino, Gonzales IV, Malcarne, & Blashill, 2019). Internal consistency in the current study was $\alpha = .95$ for SMM and $\alpha = .93$ for SMW.

2.2.3. Thin-ideal internalization

Internalization of societal thinness-based appearance ideals was measured using the Internalization: Thin/Low Body Fat subscale of the SATAQ-4R (Schaefer et al., 2017). Items were scored on a 5-point scale ranging from 1 (*definitely disagree*) to 5 (*definitely agree*), with higher scores indicating greater internalization. Previous studies have found an internal consistency of $\alpha = .75$ in men and $\alpha = .82$ in women (Schaefer et al., 2017). The SATAQ-4R has been previously validated in SMM and SMW (Convertino et al., 2019). Internal consistency in the current study was $\alpha = .77$ for SMM and $\alpha = .81$ for SMW.

2.2.4. Muscular-ideal internalization

Internalization of societal muscularity-based appearance ideals was measured using the Internalization: Muscular subscale of the SATAQ-4R (Schaefer et al., 2017). Items were scored on a 5-point scale ranging from 1 (*definitely disagree*) to 5 (*definitely agree*), with higher scores indicating greater internalization. Previous studies have found an internal consistency of $\alpha = .87$ in men and $\alpha = .91$ in women (Schaefer et al., 2017). The SATAQ-4R has been previously validated in SMM and SMW (Convertino et al., 2019). Internal consistency in the current study was $\alpha = .88$ for SMM and $\alpha = .88$ for SMW.

2.2.5. Thinness-based dissatisfaction

Thinness-based body dissatisfaction was measured using the Eating Disorder Examination Questionnaire 6.0 gender invariant version (EDE-Q; Fairburn & Beglin, 2008, pp. 309–314; Rand-Giovannetti, Cicero, Mond, & Latner, 2020). Factor 3, Weight and Shape Concern, was utilized for these analyses. This subscale includes 11 items scored on a 7-point scale ranging from 0 (*no days*) to 6 (*every day*) of the last 28 days, with higher scores indicating greater body dissatisfaction. Previous studies have found an internal consistency of $\alpha = .86$ (Friborg, Reas, Rosenvinge, & Rø, 2013). The EDE-Q has been validated in SMM and SMW (Klimek et al., 2021). The internal consistency for the current study was $\alpha = .93$ for SMM and $\alpha = .93$ for SMW.

2.2.6. Muscularity-based dissatisfaction

Dissatisfaction with one's muscularity was measured using the 7-item Muscle-Oriented Body Image subscale of the Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000). Items were scored on a 6-point scale ranging from 1 (*never*) to 6 (*always*), with higher scores indicating higher muscularity-based dissatisfaction. Previous studies that have validated the DMS in SMM (DeBlaere & Brewster, 2017) and SMW (Klimek, Convertino, Gonzales IV, Roesch, & Blashill, in press). Previous studies found an internal consistency of $\alpha = .93$ in SMM (DeBlaere & Brewster, 2017). The internal consistency in the current study was $\alpha = .91$ for SMM and $\alpha = .90$ for SMW.

2.2.7. Dietary restraint

Dietary restraint was measured using the EDE-Q (Fairburn & Beglin, 2008, pp. 309–314; Rand-Giovannetti et al., 2020). Factor 1, Dietary Restraint, was utilized for these analyses. This subscale includes three items scored on a 7-point scale ranging from 0 (*no days*) to 6 (*every day*) of the last 28 days, with higher scores indicating greater dietary

restraint. Previous studies have found an internal consistency of $\alpha = .78$ (Friborg et al., 2013). The EDE-Q has been validated in SMM and SMW (Klimek et al., 2021). The internal consistency for the current study was $\alpha = .83$ for SMM and $\alpha = .84$ for SMW.

2.2.8. Muscle building behaviors

Engagement in behaviors associated with the desire to be muscular was measured using the 7-item Muscle-Oriented Behavior subscale of the DMS (McCreary & Sasse, 2000). Items were scored on a 6-point scale ranging from 1 (*never*) to 6 (*always*), with higher scores indicating higher engagement in muscle building behaviors. Previous studies that have validated the DMS in SMM (DeBlaere & Brewster, 2017) and SMW (Klimek et al., in press). Previous studies found an internal consistency of $\alpha = .87$ in SMM (DeBlaere & Brewster, 2017). The internal consistency in the current study was $\alpha = .88$ for SMM and $\alpha = .88$ for SMW.

2.2.9. Internalized homophobia

Internalized homophobia was measured using the five item Internalized Homophobia Scale-Revised (IHP-R; Herek, Gillis, & Cogan, 2009). The IHP-R measures the degree to which an individual internalizes anti-gay societal attitudes towards them, scored on a 5-point scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). Higher scores indicate greater internalization of negative self-attitudes. Previous research has found an internal consistency of $\alpha = .83$ for SMM and $\alpha = .71$ for SMW (Herek et al., 2009). The internal consistency in the current study was $\alpha = .87$ for SMM and $\alpha = .87$ for SMW.

2.2.10. Heterosexist discrimination

Heterosexist discrimination was measured using the 14-item Heterosexist Harassment, Rejection, and Discrimination Scale (HHRDS; Szymanski, 2006). The HHRDS measures SM individuals' experiences with a variety of heterosexist events within the previous year, scored on a 6-point scale ranging from 1 (*never*) to 6 (*almost all of the time*). Higher scores indicate greater heterosexist experiences. Previous research has identified an internal consistency of $\alpha = .90$ in SMW (Szymanski, 2006) and $\alpha = .91$ in SMM (Szymanski, 2009). The internal consistency for the total score in the current study was $\alpha = .95$ for SMM and $\alpha = .95$ for SMW.

2.2.11. Sexual orientation concealment

Sexual orientation Concealment was measured using the 6-item Sexual Orientation Concealment Scale (SOCS; Jackson & Mohr, 2016). The SOCS measures the degree to which an individual attempts to conceal their own sexual identity within the previous two weeks. Items were scored on a 5-point scale ranging from 1 (*not at all*) to 5 (*all the time*), with higher scores indicating greater sexual orientation concealment. Previous research has found an internal consistency of $\alpha = .78$ in a mixed gender sample (Jackson & Mohr, 2016). The internal consistency in the current study was $\alpha = .87$ for SMM and $\alpha = .88$ for SMW.

2.2.12. Sexual minority community involvement

SM community involvement was measured using 6-items adapted from the Social Justice Sexuality Project (SJP; Harris, Battle, Pastrana, & Daniels, 2013), which is a national survey of lesbian, gay, bisexual, and transgender (LGBT) people. The items measure the degree to which an individual participates in the LGBT community (e.g., used the internet, participated in social or cultural events, read newspapers or magazines) within the previous year. Items were scored on a 5-point scale ranging from 1 (*never*) to 5 (*about once a week*), with higher scores indicating greater community involvement. The internal consistency in the current study was $\alpha = .77$ for men and $\alpha = .80$ for women.

2.3. Statistical analysis

Latent variable structural equation modeling (SEM) via R package lavaan (Rosseel, 2012) with full information maximum likelihood

estimation was employed to estimate parameter in both models. Due to differing items for SMM and SMW on the SATAQ-4R, models were estimated separately by gender because these models could not be integrated into a single model without untenable measurement assumptions.

2.3.1. Parceling strategy

Items from the peers, family, significant others, and media subscales were averaged within subscales and then used as indicators of a latent pressures factor. For dietary restraint (with three items) and for thin-ideal internalization in men (with two items), a latent variable was created by allowing its items to estimate it (i.e., a parceling strategy was not used). For all other latent variables, the single factor analysis parceling strategy was used to create three parcels per latent variable (Landis, Beal, & Tesluk, 2000). This approach was chosen because an exploratory factor analysis (EFA) indicated that for each theorized latent variable, the items comprised a single factor and previous research has indicated that this approach performs well when items are unidimensional (Landis et al., 2000; Rogers & Schmitt, 2004). In this approach, the item with the highest loading was paired with the item with the lowest loading, the next highest and the next lowest are paired, continuing until six items are paired into three parcels. If there were more than six items, the seventh was placed on the third parcel, the eighth on the second parcel, continuing until all items are allocated to a parcel.

2.3.2. Interaction specification and testing

Interactions were specified using the product-indicator approach as specified by Kenny and Judd (1984). The parcels of each latent variable that were theorized to interact were multiplied by each other such that all possible products were created. These cross-products were then specified to load onto a latent interaction variable. For each significant interaction variable, a simple slopes analysis (Aiken & West, 1991) was conducted to compare the relationships between the moderator and the criterion at low (-1 SD) and high ($+1$ SD) levels of community involvement.

2.3.3. Model fit

Model fit was determined via consensus among three indices: Comparative Fit Index (CFI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA). Guidelines for acceptable fit within SEM are an ongoing discussion amongst statisticians. Current guidance suggests that CFI values should meet or exceed 0.95, SRMR values should be less than or equal to 0.08, and RMSEA values should be less than or equal to 0.06 to indicate that a model provides an adequate fit to the data (Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004). However, these same authors suggest that when sample sizes are less than 500 and models are complex, less stringent criteria should be used; specifically that CFI values greater than or equal to 0.90, RMSEA values less than or equal to 0.10, and SRMR values less than or equal to 0.10 indicate adequate fit (Hu & Bentler, 1999; Marsh et al., 2004). Therefore, the less stringent criteria was utilized for the current study because of the model complexity as well as sample sizes less than 500 for both men and women.

3. Results

Demographics for the current sample are presented in Table 1. For differences by orientation and gender, see Table 2.

3.1. Model for SMM

Means, standard deviations, and correlations for study variables are included in Table 3. All variables had less than 1% missing data. Data were examined for normality. All items and parcel indicators utilized in the current model were lower than the skewness (>3) and kurtosis

Table 2
Means and standard deviations [M (SD)] of study variables by gender and sexual orientation.

	Men (n = 479)				Women (n = 483)			
	Gay	Bisexual	Asexual	Other	Lesbian	Bisexual	Asexual	Other
Pressure	2.84 (1.01)	2.74 (0.91)	2.77 (0.67)	2.58 (0.84)	2.68 (1.02)	2.84 (1.00)	2.24 (0.97)	2.87 (0.87)
Heterosexist Discrimination	2.46 (1.18)	2.24 (1.14)	2.05 (0.92)	2.38 (1.20)	2.58 (1.27)	2.08 (1.16)	2.53 (1.20)	2.04 (1.00)
Community Involvement	2.91 (1.14)	2.83 (1.02)	2.93 (0.76)	2.64 (1.11)	2.91 (1.23)	2.72 (1.10)	3.37 (1.08)	2.64 (1.05)
Sexual Orientation Concealment	2.62 (1.13)	2.71 (1.00)	2.43 (0.64)	2.37 (1.02)	2.25 (1.09)	2.32 (1.09)	2.38 (1.16)	1.89 (0.93)
Internalized Homophobia	2.13 (1.07)	2.34 (1.10)	2.34 (0.92)	1.89 (0.88)	1.80 (0.96)	1.89 (1.01)	1.74 (1.28)	1.68 (0.72)
Thin-Ideal Internalization	3.13 (1.16)	2.93 (1.11)	3.20 (1.16)	2.52 (1.03)	3.11 (1.01)	3.30 (1.04)	3.10 (0.72)	3.66 (1.11)
Muscular-Ideal Internalization	3.28 (1.13)	3.10 (1.03)	2.63 (1.06)	2.52 (1.12)	2.97 (1.10)	2.45 (1.05)	2.35 (1.11)	2.40 (1.06)
Thinness-Based Dissatisfaction	2.71 (1.76)	2.68 (1.63)	3.48 (1.35)	2.65 (1.88)	2.75 (1.78)	3.29 (1.73)	2.53 (1.84)	4.02 (1.73)
Muscularity-Based Dissatisfaction	3.55 (1.37)	3.39 (1.30)	3.64 (1.45)	2.92 (1.57)	2.97 (1.34)	2.52 (1.22)	3.00 (1.91)	2.30 (1.22)
Dietary Restraint	1.96 (1.87)	1.91 (1.57)	3.00 (1.87)	1.75 (1.73)	2.05 (1.89)	2.20 (1.82)	2.33 (1.98)	2.17 (2.02)
Muscle Building Behavior	2.84 (1.01)	2.74 (0.91)	2.77 (0.67)	2.58 (0.84)	2.35 (1.16)	1.97 (1.06)	2.10 (1.61)	1.49 (0.71)

Note. M and SD are used to represent mean and standard deviation, respectively.

Table 3
Means, standard deviations, and correlations among study variables for sexual minority men.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Pressures	2.78	0.96										
2. Heterosexist Discrimination	2.35	1.16	.45**									
3. Community Involvement	2.86	1.08	.38**	.44**								
4. Sexual Orientation Concealment	2.64	1.06	.39**	.38**	.26**							
5. Internalized Homophobia	2.21	1.07	.39**	.39**	.31**	.52**						
6. Thin-Ideal Internalization	3.01	1.14	.46**	.20**	.16**	.23**	.17**					
7. Muscular-Ideal Internalization	3.15	1.10	.44**	.14**	.20**	.26**	.23**	.29**				
8. Thinness-Based Dissatisfaction	2.71	1.70	.48**	.35**	.24**	.30**	.20**	.54**	.28**			
9. Muscularity-Based Dissatisfaction	3.45	1.35	.49**	.25**	.28**	.28**	.28**	.21**	.73**	.31**		
10. Dietary Restraint	1.95	1.74	.35**	.32**	.29**	.27**	.23**	.37**	.19**	.65**	.24**	
11. Muscle Building Behavior	2.55	1.20	.42**	.43**	.46**	.34**	.47**	.16**	.43**	.22**	.53**	.32**

Note. M and SD are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

(>10) values recommended by Kline (2010), and were therefore not transformed (skewness range = -0.49 to 0.92; kurtosis range = -1.09 to -0.01). Data was examined for outliers using Mahalanobis distance (Leys, Klein, Dominicy, & Ley, 2018). When potential outliers were removed from the sample, parameter estimates were within 0.03 of the results with outliers included.. Therefore, analyses with the full sample were retained. Parcels and items were internally consistent (α range = .77 to 0.95; α average = .86) and moderately correlated (r range = .14 to 0.73, r average = .35). The current study (N = 479) exceeded the number cases recommended for internally consistent and moderately correlated indicators (≥ 200 ; Weston & Gore, 2006).

3.1.1. Examination of the measurement model

The measurement model for SMM provided an acceptable fit to the data (CFI = .937, SRMR = .070, RMSEA = .051 [95% CI: 0.048-0.053]). All item/parcel loadings were significant ($ps < .001$). See Fig. 2 for loadings.

3.1.2. Examination of the structural model

The structural model for SMM provided an acceptable fit to the data (CFI = .928, SRMR = .092, RMSEA = .046 [95% CI: 0.044-0.048]). The model explained 61.7% of the variance in dietary restraint and 58.4% of the variance in muscle-building behaviors. Of the interaction effects, only one significant path emerged: the path from the interaction of community involvement and heterosexist discrimination to internalized homophobia ($\beta = .216, p < .001$). Simple slope analyses indicated that the effect of heterosexist discrimination on internalized homophobia was strongest among SMM with community involvement 1 standard deviation above the mean ($\beta = 0.473, z = 5.955, p < .001$). Further, heterosexist discrimination was not significantly associated with internalized homophobia among SMM with community involvement 1 standard deviation below the mean ($\beta = 0.041, z = 0.880, p = .379$). While non-significant paths and interactions were not removed from the

tested model, see Fig. 3 for model with nonsignificant paths removed for parsimony.

3.2. Model for SMW

Means, standard deviations, and correlations for study variables are included in Table 4. All variables had less than 1% missing data. Data were examined for normality. All items and parcel indicators utilized in the current model were lower than the skewness (>3) and kurtosis (>10) values recommended by Kline (2010) and were therefore not transformed (skewness range = -0.38 to 1.57; kurtosis range = -1.17 to 1.81). Data was examined for outliers using Mahalanobis distance (Leys et al., 2018). When potential outliers were removed from the sample, parameter estimates were within 0.03 of the results with outliers included. Therefore, analyses with the full sample were retained. Parcels and items were internally consistent (α range = .73 to 0.95; α average = .86) and moderately correlated (r range = .08 to 0.69, r average = .31). The current study (N = 483) exceeded the number cases recommended for internally consistent and moderately correlated indicators (≥ 200 ; Weston & Gore, 2006).

3.2.1. Examination of the measurement model

The measurement model for SMW provided an acceptable fit to the data (CFI = .927, SRMR = .123, RMSEA = .057 [95% CI: 0.054-0.059]). All item/parcel loadings were significant ($ps < .001$). See Fig. 4 for loadings.

3.2.2. Examination of the structural model

The structural model for SMW provided an acceptable fit to the data (CFI = .922, SRMR = .126, RMSEA = .049 [95% CI: 0.047-0.051]). The model explained 48.9% of the variance in dietary restraint and 75.6% of the variance in muscle-building behaviors. Of the interaction effects, four significant paths emerged. The path from the interaction of

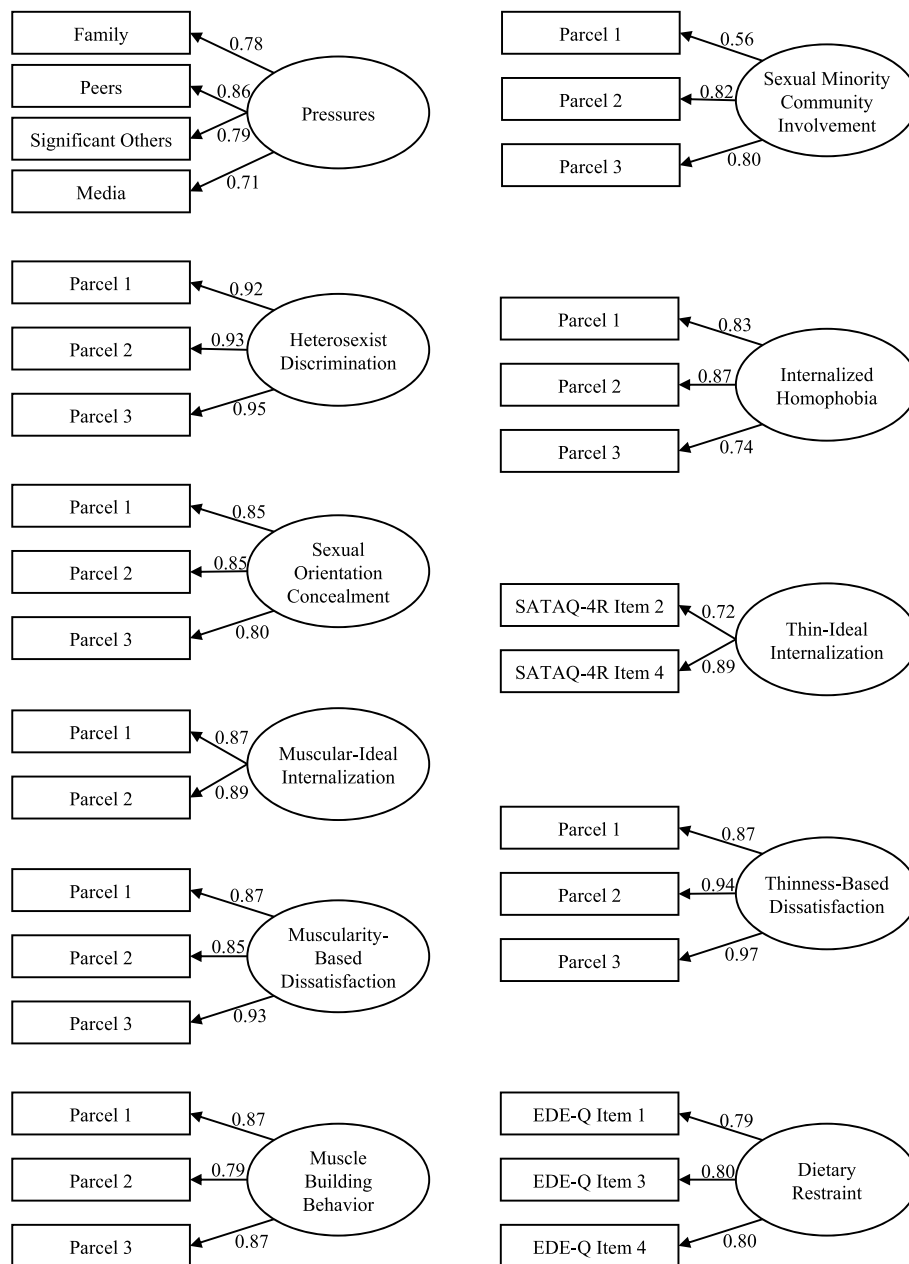


Fig. 2. Factor loadings for sexual minority men. Note. All loadings $p < .001$.

community involvement and pressures to muscular-ideal internalization was significant ($\beta = .184, p < .001$). Simple slope analyses indicated that the effect of pressures on muscular-ideal internalization was strongest among SMW with community involvement 1 standard deviation above the mean ($\beta = 0.542, z = 6.736, p < .001$). Pressures were not as strongly associated with muscular-ideal internalization among SMW with community involvement 1 standard deviation below the mean ($\beta = 0.175, z = 2.497, p = .013$). The path from the interaction of community involvement and heterosexist discrimination to internalized homophobia was significant ($\beta = .252, p < .001$). Simple slope analyses indicated that the effect of heterosexist discrimination on internalized homophobia was strongest among SMW with community involvement 1 standard deviation above the mean ($\beta = 0.571, z = 7.002, p < .001$). Further, heterosexist discrimination was not significantly associated with internalized homophobia among SMW with community involvement 1 standard deviation below the mean ($\beta = 0.067, z = 1.124, p = .261$). The path from the interaction of community involvement and heterosexist

discrimination to sexual orientation concealment was significant ($\beta = .107, p = .046$). Simple slope analyses indicated that the effect of heterosexist discrimination on sexual orientation concealment was strongest among SMW with community involvement 1 standard deviation above the mean ($\beta = 0.532, z = 6.994, p < .001$). Heterosexist discrimination was not as strongly associated with sexual orientation concealment among SMW with community involvement 1 standard deviation below the mean ($\beta = 0.319, z = 3.551, p < .001$). The path from the interaction of community involvement and muscularity-based dissatisfaction to muscularity behaviors was significant ($\beta = .170, p < .001$). Simple slope analyses indicated that the effect of muscularity-based dissatisfaction on muscularity behaviors was strongest among SMW with community involvement 1 standard deviation above the mean ($\beta = 0.768, z = 10.272, p < .001$). Muscularity-based dissatisfaction was not as strongly associated with muscularity behaviors among women with community involvement 1 standard deviation below the mean ($\beta = 0.428, z = 6.809, p < .001$). While non-significant

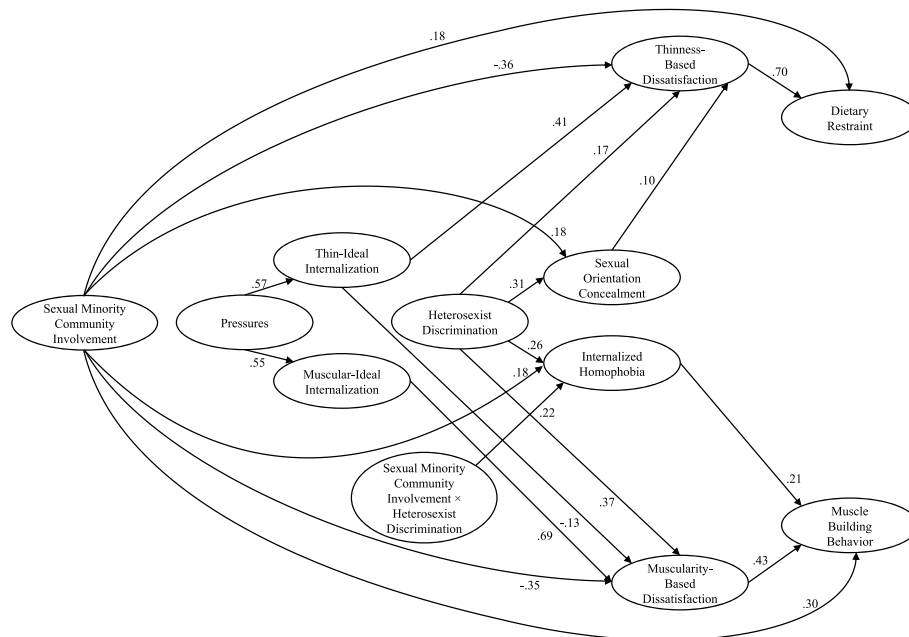


Fig. 3. Structural equation modeling results in sexual minority men.

Note. Non-significant tested paths are removed from the figure for parsimony, but are not removed from overall model. All paths shown are significant at $p > .05$.

Table 4
Means, standard deviations, and correlations among study variables for sexual minority women.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Pressures	2.80	1.00										
2. Heterosexist Discrimination	2.19	1.19	.35**									
3. Community Involvement	2.77	1.13	.29**	.52**								
4. Sexual Orientation Concealment	2.29	1.09	.39**	.41**	.25**							
5. Internalized Homophobia	1.86	1.00	.32**	.39**	.26**	.56**						
6. Thin-Ideal Internalization	3.27	1.03	.50**	.15**	.16**	.22**	.15**					
7. Muscular-Ideal Internalization	2.50	1.07	.28**	.31**	.19**	.25**	.25**	.25**				
8. Thinness-Based Dissatisfaction	3.19	1.76	.52**	.17**	.15**	.17**	.12**	.57**	.10*			
9. Muscularity-Based Dissatisfaction	2.61	1.27	.30**	.40**	.25**	.30**	.30**	.21**	.74**	.21**		
10. Dietary Restraint	2.17	1.84	.36**	.18**	.17**	.14**	.08	.35**	.12**	.56**	.18**	
11. Muscle Building Behavior	2.03	1.10	.31**	.56**	.46**	.38**	.49**	.14**	.49**	.12**	.67**	.23**

Note. M and SD are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$.

paths and interactions were not removed from the tested model, see Fig. 5 for model with nonsignificant paths removed for parsimony.

4. Discussion

The aim of the current study was to integrate the tripartite influence model (Thompson et al., 1999) and minority stress theory (Meyer, 2003) into a cohesive theoretical framework for explaining eating pathology among SM individuals. Overall, the model explained explained 61.7% and 58.4% of the variance for dietary restraint and muscle-building behaviors, respectively, in SMM and 48.9% and 75.6% of the variance for dietary restraint and muscle-building behaviors, respectively, in SMW. The current model explains greater variance than previously reported for the tripartite model (47.1% and 33.5% of the variance for disordered eating behaviors and muscle-building behaviors; Tylka & Andorka, 2012) and models utilizing minority stress theory (17.4%–38% in disordered eating; Mason & Lewis, 2015, 2016; Mason et al., 2017; Watson et al., 2016). Therefore, the current model demonstrated an improvement in variance explained, over and above previous models.

4.1. Findings relevant to the tripartite influence model

Aspects of the full model that are specific to the tripartite influence

model as specified by Thompson et al. (1999) were supported, namely that paths from pressures to thin-ideal internalization, from thin-ideal internalization to thinness-based dissatisfaction, and from thinness-based dissatisfaction to dietary restraint were all significant, positive, and at least of moderate strength (0.38-0.65 in SMW and 0.41-0.70 in SMM). These findings bolster prior research in SMM (Tylka & Andorka, 2012) and SMW (Hazzard et al., 2019) that found support for the tripartite influence model in SM individuals. The current study also found support for a modified version of the tripartite influence model that includes dual body image pathways to body change behaviors. This additional pathway was supported in both SMM and SMW; specifically, that paths from pressures to muscular-ideal internalization, from muscular-ideal internalization to muscularity-based dissatisfaction, and from muscularity-based dissatisfaction to muscle building behaviors were all significant, positive, and at least of moderate strength (0.36-0.69 in SMW and 0.43-0.69 in SMM). Thus, these findings replicate prior work in SMM that found support for dual body image pathways (Tylka & Andorka, 2012). Furthermore, this is the first study, to our knowledge, to support the dual body image pathway modification in SMW. This finding is not completely unexpected as prior research has noted an increase in the desire for a lean and toned body among young women (Robinson et al., 2017; Tiggemann & Zaccardo, 2018). This study provides preliminary evidence that these pathways also exist in

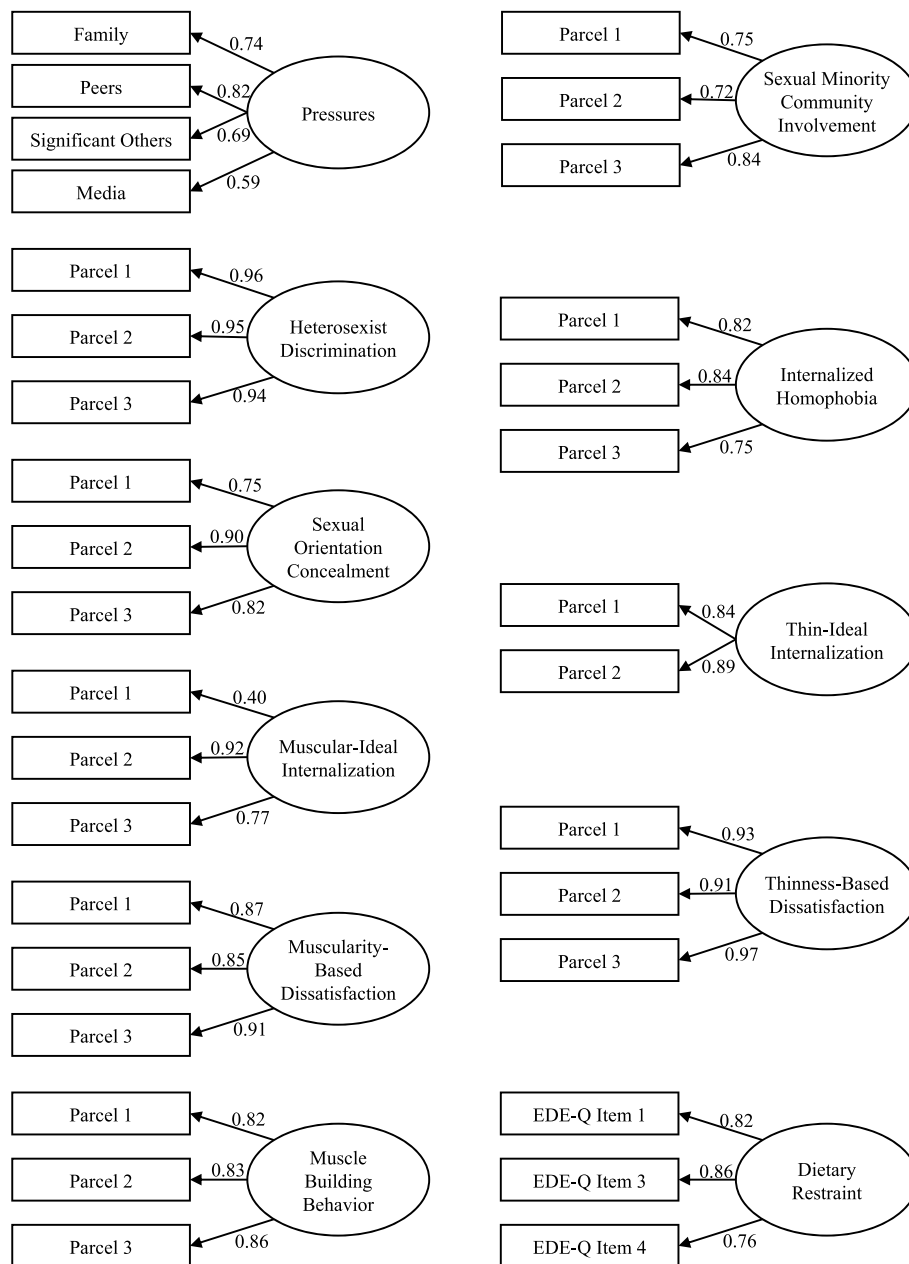


Fig. 4. Factor loadings for sexual minority women.
 Note. All loadings $p < .001$

SMW.

4.2. Findings relevant to minority stress theory

Aspects of minority stress theory (Meyer, 2003) were supported within the model as well. For SMM and SMW, the paths from heterosexist discrimination to sexual orientation concealment and internalized homophobia were significant, positive, and of small size among SMM and moderate size among SMW, indicating that greater distal stressors (i.e., heterosexist discrimination) are associated with greater proximal stressors (i.e., sexual orientation concealment and internalized homophobia), as hypothesized by minority stress theory. Furthermore, the paths from (1) internalized homophobia to muscle building behaviors in SMM and SMW, (2) heterosexist discrimination and sexual orientation concealment to thinness-based dissatisfaction in SMM, and (3) heterosexist discrimination to muscularity-based dissatisfaction in SMW were significant, positive, and of small size, even when including other eating-

and body image-specific influences. This finding supports the hypothesis of minority stress theory that SM stressors will lead to poor mental health outcomes, and, further, is in line with prior research finding similar effects of SM stressors on eating and body image outcomes (e.g., Mason & Lewis, 2015; Wang & Borders, 2017; Watson et al., 2016).

However, minority stress theory also states that social support, including that of the SM community, would mitigate the negative mental health effects of minority stressors. There was no support for a mitigating effect of community involvement on the association between heterosexist discrimination and sexual orientation concealment. There was a significant interaction effect of community involvement and heterosexist discrimination on internalized homophobia for both SMM and SMW, but this effect was such that for individuals that experience greater discrimination, involvement in the community is significantly associated with greater internalized homophobia with medium to large effects. In addition, there was a significant interaction between community involvement and heterosexist discrimination for SMW, such that

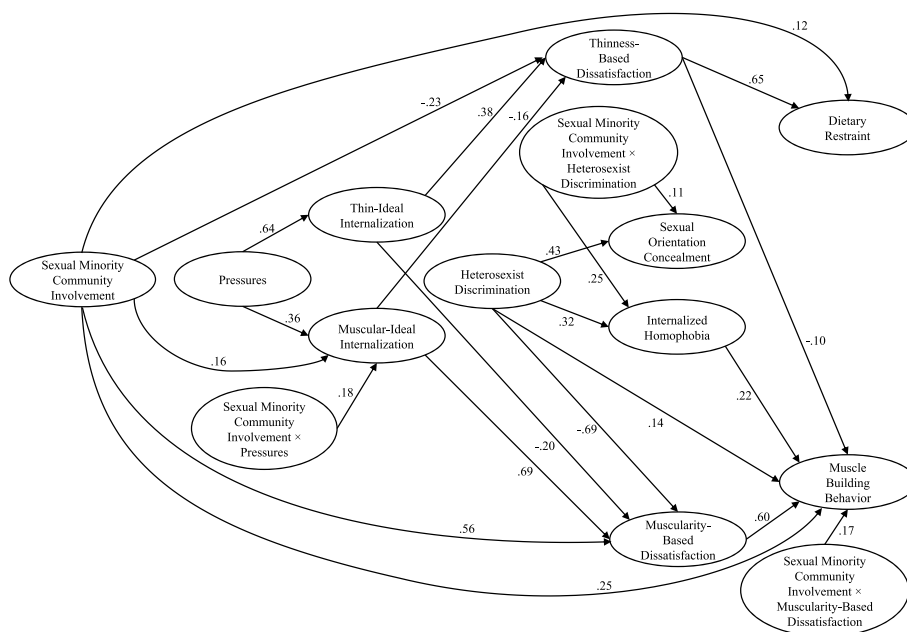


Fig. 5. Structural equation modeling results in sexual minority women. *Note.* Non-significant tested paths are removed from the figure for parsimony, but are not removed from overall model. All paths shown are significant at $p > .05$.

for individuals that experience greater discrimination, involvement in the community increases sexual orientation concealment. This is contrary to minority stress hypotheses and has not been explored thus far in the literature. One potential explanation for this unexpected finding may be that individuals who endorse high discrimination may be experiencing the “black sheep effect.” The black sheep effect states that individuals of an ingroup judge their fellow ingroup members’ behavior more harshly than comparable outgroup members when the ingroup members’ behavior may reflect poorly on the individual (Marques, Yzerbyt, & Leyens, 1988). Utilizing this framework, it may be that individuals who experience discrimination reach out to the SM community for support. If they do not receive the expected support, and perhaps instead experience intraminority stressors, this could heighten internalized anti-LGBT attitudes that have been propagated and communicated through overt discrimination. The current study was not designed to examine such psychological processes; therefore, future research would benefit from formally testing the black sheep effect and other frameworks in better understanding the unexpected effect of community involvement in SM stressors.

The association between community involvement and body image-related outcomes was complicated by seemingly contradictory findings. In both men and women, community involvement was significantly and positively associated with greater dietary restraint and muscle building behaviors of small-to-medium size (range: .12-.30). Furthermore, the bivariate correlations indicated that both muscularity-based dissatisfaction and thinness-based dissatisfaction were significantly and positively associated with community involvement of small-to-medium size (range: 0.14-0.46). This may lead to the conclusion that community involvement is associated with greater body dissatisfaction and eating disordered behaviors. Contrarily, in the overall model, community involvement was negatively associated with muscularity-based dissatisfaction in SMM with moderate strength and negatively associated with thinness-based dissatisfaction in SMM and SMW (path coefficients were -.36 and -.23 respectively). This somewhat contradictory finding can most likely be attributed to the variance explained by the other latent variables in the model. Bivariate correlations are the total association between two variables, or their association without accounting for other effects that might influence this relationship (Brown, 2015). When included in a structural equation model, the

association between two variables is now the unique (i.e., partial) association, removing the effect of all other variables. Stated differently, when covarying out shared variance with all SM stress variables, and internalization of the appearance ideal and pressures to conform to that ideal, greater community involvement is significantly associated with lower muscularity-based dissatisfaction in men and women and lower thinness-based dissatisfaction in men. This may suggest that, in a hypothetical world where there are no effects of SM stressors or socio-cultural pressures to appear a certain way, being more involved with the SM community is helpful for one’s body satisfaction. Therefore, it appears that the association between community involvement and body dissatisfaction is complicated and, at least in the current study, varied substantially depending on the analytic approach.

4.3. Differences by gender

Some findings relevant to the dual pathway model differed by gender. First of note, there were two significant paths in women that were non-significant in men: 1) a negative path between muscular-ideal internalization and thinness-based dissatisfaction of small size and 2) a negative path between thinness-based dissatisfaction and muscle building behavior of small size. These two paths could exist for women and not for men because of differences in the body ideal and subsequent associated behaviors. Men are more likely to pursue a body ideal characterized by both muscularity and leanness, which is thought to improve the appearance of muscularity. Therefore, men may internalize the muscular ideal, but pursue both muscularity and thinness through simultaneous or quick alternating “bulking” and “cutting” phases (Murray, Griffiths, & Mond, 2016), which are less likely in women.

There were also differences by gender for aspects relevant to minority stress theory. In men, there were two additional significant paths: 1) a small, positive main effect of community involvement on sexual orientation concealment, and 2) a small, positive main effect of community involvement on internalized homophobia (but this was qualified by a significant interaction, such that this association was not significant at low levels of community involvement; therefore, this main effect is somewhat less relevant). In women, there were no statistically significant main effects of community involvement on sexual orientation concealment or internalized homophobia. Rather, the interactions were

significant, such that the association between heterosexist discrimination and sexual orientation concealment, as well as the association between heterosexist discrimination and internalized homophobia, were strongest with a large effect size at higher levels of community involvement. Therefore, while it appears that community involvement may serve to moderate these association for women, community involvement is associated with greater proximal stressors at high levels.

In women, there were two additional paths: 1) a small, positive path between community involvement and muscular-ideal internalization (this was qualified by a significant interaction, described below), and 2) a small, positive path between heterosexist discrimination and muscle building behavior. There were also two additional interaction effects such that community involvement accelerated the association of pressures on muscular-ideal internalization and muscularity-based dissatisfaction on muscle building behaviors. Given the dearth of research on factors within the SMW community that may explain such an association, it is unclear why greater community involvement would lead to an acceleration of muscular-ideal internalization and muscle building behaviors. One explanation is that gender expression in SMW communities is diverse and, as such, there is more room for engagement in traditionally masculine building activities as compared to heterosexual communities. For example, prior research has found that greater levels of masculine/butch expression in SMW was associated with lower levels of thin ideal internalization (Henrichs-Beck & Szymanski, 2017). It may be that masculine/butch SMW may identify with a more masculine ideal and thus engage in more muscle building behaviors when they feel that these behaviors and ideals are acceptable within the SMW community. Though these results were not significant in men, it should be noted that results were trending in the same direction as women, such that men who were highly involved in the community and endorsed high pressures experienced greater muscular-ideal internalization and men with high muscularity-based dissatisfaction who were highly involved in the community experienced greater muscle building behaviors. Therefore, it is possible that these interaction effects exist for men but there was such a large effect size for pressures and muscularity-based dissatisfaction, respectively, that there was not much additional variance to predict. Overall, it appears that community involvement may accelerate the association of pressures on internalization and dissatisfaction on muscle building behaviors for both SMM and SMW, but this finding was not supported statistically in men.

4.4. Importance of community involvement for SM adults

In light of the moderation effects found in the current study, examining community involvement within body image models for SM populations is of paramount importance. Examinations of community involvement are often complicated by the complexity of the construct. Indeed, researchers have tried to parse out the community construct into *community connectedness*, reflecting cognitive identification and solidarity with the community, and *community participation*, reflecting concrete behaviors such as attending social events or professional groups (Frost & Meyer, 2012). Prior research in SM populations has indicated a stronger association between community participation and substance use as opposed to between community connectedness and substance use (Demant, Hides, White, & Kavanagh, 2018; Demant & Oviedo-Trespalacios, 2019); however, it is unclear whether the association between community participation and eating disordered behavior would be similarly stronger than community connectedness and eating disordered behavior. Since the items in the current study are behaviorally focused, future research may consider examining how these results may change when considering community connectedness as opposed to behavioral participation.

4.5. Limitations

The current study has some limitations of note. First, the cross-

sectional nature of the study's design precludes conclusions of temporality. Future studies should address this limitation by examining this model with longitudinal research designs. Second, while the current study was only designed to integrate two theories, there are other relevant theories and mechanisms that may be relevant for future work. For example, objectification theory (Fredrickson & Roberts, 1997) may be relevant given prior findings on objectification experiences within the SM community (Davids et al., 2015). Finally, the current study relied on self-report. Future research may integrate clinician-based measures to establish the validity of eating pathology reported. Despite these limitations, the current study may also offer important considerations to the field.

4.6. Implications for theory in eating disorders

The current study has implications for theoretical work in eating disorders. First, the current study follows calls from researchers to create a comprehensive, integrated model of body image and disordered eating in SM individuals (Mason, Lewis, & Heron, 2018). Including both the tripartite model and minority stress theory has promise for explaining disparities in disordered eating by sexual orientation (Calzo et al., 2017). The integration provided in the current study can therefore inform future investigations of disordered eating within this population. This study also highlights the importance of including minority stress theory within investigations of eating pathology for SM individuals. Second, the current study complicates the association between SM communities and mental health outcomes, as stated in minority stress theory. While SM communities can no doubt have a mitigating effect for some mental health outcomes (e.g., Griffin et al., 2018; Lambe, Cerezo, & O'Shaughnessy, 2017; Salfas, Rendina, & Parsons, 2019), it should be noted that this does not appear to be the case for eating pathology in this sample. Uniformly, greater community involvement was associated with greater dietary restraint and muscle building behaviors with mostly small effect sizes. This finding is in direct contrast to minority stress theory, which considers community involvement to be a protective factor against psychopathology (Meyer, 2003). When considering the interaction effects observed in the current study, community involvement does not seem buffer against negative outcomes and, in some cases, may actually contribute to the negative effect of distal stressors on proximal stressors. Third, and somewhat more broadly, this study highlights the importance of testing latent interactions in structural equation modeling. Without testing these interactions, the accelerative association of community involvement on outcomes would not have been observed. Therefore, failing to examine interaction effects in these models could result in misspecified models and may have implications for clinical work. For example, if heterosexist discrimination is only associated with internalized homophobia for those with high community involvement, then targeting an intervention widely in the community for internalized homophobia may be less fruitful than targeting an intervention with only those who participate regularly.

5. Conclusion

The current research was the first known study to empirically integrate the tripartite influence model and minority stress theory into a cohesive, testable model in SMM and SMW. Minority stressors were positively associated with greater thinness-based dissatisfaction (in men only), muscularity-based dissatisfaction, and muscle building behaviors. Furthermore, SM community involvement was associated with greater dietary restraint and muscle building behaviors in men and women, and accelerated the association of muscularity-based dissatisfaction with muscle building behaviors in SMW. Future research should examine this model longitudinally to ascertain if theoretical causal pathways are supported.

Author contributions

ADC and AJB conceived the study and collaborated in designing the procedures. MG coordinated the study and data collection. ADC and JLB performed the data analyses. ADC, JP and MG drafted the manuscript, with all authors providing critical revisions. All authors read and approved the final manuscript.

Ethics statement

The study was approved by the Institutional Review Board (IRB) at the San Diego State University. Participants provided informed consent before taking part in the research.

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