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## Validation of the factor structure of the Eating Pathology Symptoms Inventory in an international sample of sexual minority men

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### Abstract

Sexual minority individuals are at greater risk for the development of eating-disorder (ED) psychopathology. Despite the importance of understanding ED symptoms in sexual minority men, most ED measures were developed and validated in heterosexual, young adult, white women. The psychometric properties of ED measures in diverse populations remain largely unknown. The purpose of this study was to test: 1) whether the eight-factor structure of the Eating Pathology Symptoms Inventory (EPSI) replicated in sexual minority men and 2) group-level mean differences between gay and bisexual men on the eight EPSI scales. International participants ( $N = 722$  sexual minority men from 20 countries) were recruited via the Grindr smartphone application. Confirmatory factor analysis (CFA) was completed using a weighted least square mean and variance adjusted estimator. Group differences in eating pathology between gay and bisexual men were tested using independent samples  $t$ -tests. The CFA model fit was good on all fit indices (CFI/TLI  $> 0.90$ , RMSEA  $< 0.06$ ). Gay and bisexual men only differed on the EPSI Binge Eating scale. The results of this investigation suggest that the EPSI may be a useful tool for understanding eating pathology in this population. Using psychometrically sound assessment tools for sexual minority men is a vital piece of treatment planning and clinical decision making. The current study fills an important gap in the clinical and research literature by testing the validity and psychometric properties of a commonly used ED measure in sexual minority men.

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CRedit authorship contribution statement

Ms. Perko, Dr. Forbush, Dr. Bohrer, and Dr. Griffiths contributed to study conceptualization. Dr. Griffiths was responsible for initial data collection and provided consultation pertaining to the dataset and its participants. Ms. Perko, Ms. Richson, and Ms. Chapa were involved in data analysis. Drs. Forbush and Griffiths consulted on decisions pertaining to analyses. Ms. Perko, Dr. Christensen, Ms. Richson, Ms. Chapa, and Dr. Bohrer all contributed to the writing of the initial manuscript draft. Drs. Christensen, Forbush, and Griffiths revised drafts of the manuscript. All authors contributed to revisions addressing feedback from the editor and reviewers. All authors reviewed and approved the revised manuscript prior to submission.

Declaration of competing interest

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## Keywords

Sexual minority; Men; Eating disorders; Assessment; Psychometric

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## 1. Introduction

A growing body of research suggests that sexual minority (SM) individuals are more likely to experience physical (Frost et al., 2015) and mental health (Plöderl & Tremblay, 2015) problems, as compared to their heterosexual counterparts. SM identities include, but are not limited to, gay, lesbian, bisexual, queer, questioning, pansexual, and mostly heterosexual identities. To best understand mental-health issues in sexual minorities, it is important to ensure proper assessment and diagnosis. To date, few studies have evaluated measures of psychopathology in SM populations. In other words, it is unknown if measures that have been developed and validated in primarily heterosexual populations appropriately capture the experiences of SM individuals.

Evaluating the psychometric properties of assessment measures in sexual minorities, particularly SM men, is of high relevance to eating disorder (ED) research. Although EDs impact people of all genders, races, and socioeconomic levels (Cohn et al., 2016; Schaumberg et al., 2017; Smolak & Striegel-Moore, 2001), research has historically been centered on the experiences of a narrow subset of the population (i.e., heterosexual, young, white women). This is problematic because there is ample evidence that SM men are at high risk for eating pathology (Calzo et al., 2017). Gay and bisexual men report higher weight concerns (Calzo et al., 2013) and greater desire for muscularity and body dissatisfaction (Frederick & Essayli, 2016) than heterosexual men. Consequently, there is higher use of anabolic steroids in SM men (Blashill et al., 2017). Furthermore, compared to heterosexual men, SM men report greater engagement in disordered-eating behaviors like dieting, use of diet pills, vomiting, and laxative use (Austin et al., 2013; Calzo et al., 2017; Diemer et al., 2015; Matthews-Ewald et al., 2014).

Although men comprise approximately 25% of individuals with EDs (Sweeting et al., 2015), most self-report measures of disordered-eating behaviors were developed and validated using female samples (Cooper et al., 1989; Garner et al., 1983; Garner & Garfinkel, 1979; Stice et al., 2000). There are significant gaps in the ED field's understanding of the psychometric functioning of these instruments in men, yet these measures are routinely used to assess men (Boerner et al., 2004). Furthermore, measures that have been validated in primarily heterosexual and female populations may not accurately map onto the experiences of SM male populations. Thus, research to validate existing measures in SM men will help ensure that appropriate assessment tools are available and the experiences of SM individuals are captured by measures used by clinicians. Rigorous assessment contributes to well-developed treatment plans and improved outcomes for patients; therefore, evaluating the psychometric properties of instruments has implications for the extent to which we can treat SM individuals.

The Eating Pathology Symptoms Inventory (EPSI) is an empirically derived, dimensional self-report measure that has demonstrated evidence of validity across diverse groups. The

EPSI was validated in both men and women from two student samples, a community sample, a specialized ED treatment sample, and a general outpatient treatment sample (Forbush et al., 2013). The eight-factor structure has demonstrated invariance across sex categories, except for the Muscle Building scale which appears to be more relevant to men (Forbush et al., 2013). The eight-factor structure appears to be robust in both men and women and has been replicated in an independent sample of men and women (Forbush et al., 2014). In this study, men scored significantly higher than women on Excessive Exercise, Muscle Building, and Negative Attitudes toward Obesity, which suggests that the EPSI may be more sensitive to specific forms of eating pathology that are more pertinent to men (Forbush et al., 2014). An additional study on the factor structure of the EPSI found that the eight-factor structure replicated in an outpatient sample of individuals with EDs (Coniglio et al., 2018); however, a seven-factor structure, in which Excessive Exercise and Cognitive Restraint scales loaded onto a single factor, fit the data best in an undergraduate sample and a sample recruited from Amazon's Mechanical Turk (MTurk) website (Coniglio et al., 2018).

### 1.1. Purpose and hypothesis

The primary purpose of this study was to test the factor structure of the EPSI in an international sample of SM men. The secondary purpose of this study was to investigate whether gay and bisexual men demonstrated differences in ED behaviors, as measured by EPSI scale means. Based on past research demonstrating high levels of disordered eating in SM individuals (Calzo et al., 2017), we believed that the present sample was likely more similar to the outpatient sample recruited by Coniglio et al. (2018), which replicated the eight-factor model, rather than the seven-factor model observed in undergraduate and MTurk samples. Therefore, consistent with past research on the psychometric properties of the EPSI (Coniglio et al., 2018; Forbush et al., 2013; Forbush et al., 2014), we hypothesized that the original eight-factor EPSI structure would replicate among SM men. Although there are few studies comparing eating pathology between gay and bisexual men, past studies found that gay men and boys demonstrated higher levels of bulimianervosa symptoms, particularly purging, compared with bisexual men and boys (Simone et al., 2020; Watson et al., 2017). Consistent with this research, we hypothesized that gay men would report higher levels of purging behaviors, measured by the EPSI Purging scale, compared to bisexual men.

## 2. Method

### 2.1. Participants and procedure

Participants were  $N = 722$  men ages 18–83 years that identified as sexual minorities. Men were recruited for the Gay Bodies Worldwide project,<sup>1</sup> a longitudinal study focused on cognitions and emotions related to physical appearance. Men that identified as gay ( $n = 582$ ) or bisexual ( $n = 102$ ) made up the majority of the present sample. All demographic data are presented in Table 1 with the exception of race and ethnicity data, which are presented in Table 2. The present sample included a number of SM identities including

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<sup>1</sup>The Gay Bodies Worldwide project is a pre-registered trial with an open-science framework. Study materials including recruitment materials, code, and data can be accessed using the following website: [https://osf.io/hqkua/?view\\_only=b88b587ef8494bd195ade09ad511a7df](https://osf.io/hqkua/?view_only=b88b587ef8494bd195ade09ad511a7df).

gay, bisexual, asexual, heterosexual, pansexual, questioning, and queer (see Tables 1 and 2). Gay Bodies Worldwide received ethics approval from the Human Ethics Sub-Committee at the University of Melbourne (protocol number: 1853237.4). Men were recruited via digital advertisements on the Grindr smartphone application (app), a location-based dating app for members of the lesbian, gay, bisexual, transgender, transsexual, queer/questioning (LGBTQ+) community. The present sample consisted of men from 20 countries. Individuals that participated in the Gay Bodies Worldwide project were asked to complete a battery of self-report questionnaires 10 times over the course of five years. Longitudinal data collection is ongoing and the present data are from participants' initial survey completion.

## 2.2. Measures

The EPSI (Forbush et al., 2013) is a 45-item self-report measure of ED psychopathology. The EPSI includes eight scales: Binge Eating, Body Dissatisfaction, Cognitive Restraint, Excessive Exercise, Muscle Building, Negative Attitudes Toward Obesity, Purging, and Restricting. Items are scored on a five-point Likert scale (0 = Never; 4 = Very Often) and are summed to create a score for each scale. The EPSI demonstrated a seven- to eight-factor structure in clinical and non-clinical samples (Coniglio et al., 2018; Forbush et al., 2013; Forbush et al., 2014). The EPSI demonstrated evidence for two-to-four-week test-retest reliability (mean  $r = 0.73$ ), internal consistency (Cronbach's alpha = 0.84–0.89), and discriminant and convergent validity across clinical- and non-clinical samples and binary genders (Coniglio et al., 2018; Forbush et al., 2013; Forbush et al., 2014). Internal consistency estimates of each EPSI scale in the present study were good (Cronbach's alpha = 0.70–0.87).

## 2.3. Statistical analyses

Missing data were handled with maximum likelihood multiple imputation procedures using the R package "Amelia" (Honaker et al., 2011), if 20% or less of data were missing (Little et al., 2016). Data from 5.3% of the sample ( $n = 38$ ) could not be imputed due to missing more than 80% of EPSI items and were excluded from analyses. Of the remaining sample ( $N = 684$ ), approximately 0.4% of all EPSI values were missing completely at random (MCAR; Little, 1988) and were imputed. Missing responses underwent five imputations and a final imputed value for each missing response was calculated as a rounded average of the five imputed iterations for each response. Due to the limited number of bisexual men ( $n = 102$ ) in the present sample, separate confirmatory factor analyses (CFAs) could not be conducted for gay and bisexual men. To assess whether gay and bisexual men reported significantly different EPSI scale scores, multivariate analysis of variance (MANOVA) was conducted in SPSS. There were not enough individuals reporting a sexual identity other than gay and bisexual with adequate sample size to detect group differences.

To determine whether or not to test an alternative factor structure, we used exploratory factor analysis (EFA) to test the fit of the one-through eight-factor structures in Mplus using a robust weighted least squares (WLSMV) estimator. Next, a CFA with a WLSMV estimator was used to test whether the EPSI eight-factor structure replicated in a sample of SM men using the R package "lavaan" (Rosseel, 2012). Several fit indices were used to determine the model fit including: Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean

Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Good model fit was indicated by: CFI values  $>0.90$  (Schweizer, 2010), TLI values  $>0.90$  (Schweizer, 2010; Tucker & Lewis, 1973), RMSEA  $<0.06$ , and SRMR values  $<0.08$  (Hu & Bentler, 1999). Modification indices were examined to identify areas of localized model strain.

### 3. Results

EFA showed that the eight-factor structure demonstrated the best fit to the data (see Table 3). Next, we used CFA to test the fit of the original eight-factor EPSI structure. CFA indicated that the eight-factor structure yielded good fit to the data by all selected model fit indices ( $\chi^2 = 2858.522$  [917],  $p < .001$ , CFI = 0.921, TLI = 0.914, RMSEA = 0.056 [ $p < .001$ ], SRMR = 0.074). All items demonstrated significant loadings on their latent factors (see Fig. 1). Covariances between latent factors are displayed in Table 4.

Inspection of high modification indices revealed that Muscle Building item #32 (thinking muscles were too small) demonstrated shared variance with the latent Body Dissatisfaction factor. Because dissatisfaction with muscle size theoretically reflects a specific type of body dissatisfaction, we re-ran the CFA model allowing item #32 to cross-load with Body Dissatisfaction. Model fit improved slightly ( $\chi^2 = 2684.652$  [916],  $p < .001$ , CFI = 0.928, TLI = 0.922, RMSEA = 0.053 [ $p < .05$ ], SRMR = 0.072). Additionally, we found two other theoretically meaningful high modification indices in the original CFA model results: two Restricting items, #43 (skipped two meals in a row) and item #10 (got full more easily than most), demonstrated shared variance with the latent Binge Eating factor. The covariance between the meal skipping item and the Binge Eating factor may reflect the close relationship between binge eating and restricting. Binge eating is often triggered by restriction of intake and restriction may follow binge eating as an effort to compensate for the eating episode. These covariances have not been detected or modeled in past studies on the factor structure of the EPSI. We ran an additional CFA model where these two items were allowed to cross-load with Binge Eating (in addition to the cross-loading permitted for thinking muscles were too small). Item #43, skipping two meals in a row, loaded positively onto the Binge Eating Factor and item #10, getting full more easily than most, loaded negatively. Cross-loading items #10, #32, and #43 caused model fit to improve slightly ( $\chi^2 = 2426.614$  [914],  $p < .001$ , CFI = 0.938, TLI = 0.933, RMSEA = 0.049 [ $p > .05$ ], SRMR = 0.067).

A MANOVA revealed that gay and bisexual men significantly differed on mean scores for the Binge Eating scale (see Table 5), such that bisexual men scored significantly higher than gay men. However, the effect size was small ( $\eta_p^2 = 0.007$ ). There were no other significant mean differences on EPSI scale scores between gay and bisexual men.

### 4. Discussion

The purpose of the current study was to validate the factor structure of the EPSI in an international sample of SM men and evaluate group differences between gay and bisexual men on EPSI scales. The EPSI's eight-factor structure has been supported in

past studies of men and women from two student samples, community members, patients receiving specialty ED treatment, and general psychiatric outpatients (Forbush et al., 2013); we hypothesized that the eight-factor structure would replicate in SM men. We also hypothesized that we would find significant differences in EPSI Purging scores between gay and bisexual men. Consistent with our first hypothesis, we found that the factor structure of the EPSI specified in previous research was reasonably consistent in SM men. Model fit was good on all fit indices, suggesting that the EPSI measures the same latent concepts in SM men as compared to past studies of the EPSI structure (see Forbush et al., 2013; Forbush et al., 2014).

Results from the present study highlight the overlap between Muscle Building and Body Dissatisfaction scales of the EPSI among SM men. CFA model fit improved by allowing an item from the Muscle Building scale to cross load onto the latent Body Dissatisfaction latent factor. It is likely that thinking one's muscles are too small represents a specific type of body dissatisfaction, which may be particularly relevant for SM men. Therefore, it is important for clinicians to consider cognitive aspects of muscularity-oriented disordered eating (e.g., thinking one's muscles are too small) in addition to addressing problematic behaviors (e.g., excessive exercise). Indeed, numerous studies point to the prominence of a muscular appearance ideal for men (for review see Murray et al., 2017).

Past research also suggests a close relationship between restricting and binge eating. Multiple studies exploring the hierarchical dimensional structure of disordered eating and other internalizing symptoms have found that EPSI Restricting items negatively load onto a latent binge-eating dimension (Forbush et al., 2018, 2017). Cross-loading of two Restricting items onto Binge Eating highlight the important relationship between binge-eating and restricting symptoms in SM men. It is important to note that although minor modifications to the model improved model fit slightly, the EPSI in its original form appears to be reasonable to use in samples of SM men. This is important because barriers exist for both men and sexual minorities in receiving treatment for disordered eating. Using instruments such as the EPSI to appropriately measure ED symptoms in SM men may improve clinicians' ability to recognize and treat disordered eating in this population.

The second aim of the study was to investigate differences between gay and bisexual men on EPSI scales. Gay and bisexual men demonstrated more similarities than differences. Although few men in the sample reported having a suspected ED or ED diagnosis, both groups demonstrated levels of pathology that were higher than published norms from undergraduate men and closely resembled norms from men receiving general outpatient psychiatric treatment (Forbush et al., 2013). The high level of ED symptoms reported in the sample is consistent with research suggesting that sexual minorities may experience higher levels of ED psychopathology than heterosexual individuals (Calzo et al., 2017). The only significant difference between eating pathology in gay and bisexual men in this sample was that bisexual men reported significantly higher symptomology on the Binge Eating scale than gay men. Past research that has investigated differences between gay and bisexual men in ED symptoms found that when group differences emerge, gay men tend to exhibit more severe psychopathology (Simone et al., 2020; Watson et al., 2017). However, Austen et al. (2020) found that bisexual men are more vulnerable to weight stigma, which



is associated with binge eating (Wott & Carels, 2010), than gay men. Elevated Binge Eating scores among bisexual men may also support Minority Stress Theory (Meyer, 2003). Public perception of bisexual people is more negative than other SM groups (Herek, 2002), and bisexual people face both homophobia and discrimination from within the LGBTQ<sup>+</sup> community (Hayfield et al., 2014). Past research suggests binge eating may serve as an emotion-regulation strategy (Leehr et al., 2015), which could be used by bisexual people to cope with heightened levels of minority stress. Escape Theory (Heatherton & Baumeister, 1991) suggests that negative self-assessment and negative affect motivate an individual to temporarily reduce levels of self-awareness through binge eating in an effort to “escape” the negative mood states and cognitions. Based on this theory, discrimination based on bisexual identity may contribute to negative self-assessment and negative mood states in bisexual individuals, resulting in increased levels of binge eating as an emotion regulation strategy. Supporting this interpretation, past research has shown that other maladaptive emotion regulation techniques, such as non-suicidal self-injury, were elevated in bisexual populations compared with gay and lesbian populations (Dunlop et al., 2020). Additional research is needed to elucidate nuances in the presentation of EDs among SM men.

Interestingly, our results did not replicate past findings suggesting differences in purging between gay and bisexual men (Simone et al., 2020; Watson et al., 2017). Both Simone et al. (2020) and Watson et al. (2017) used samples that were younger and represented a narrower age range (i.e., college students and adolescents) than the present sample. Past research has found that disparities in physical health symptoms and conditions between SM and heterosexual individuals change over the course of one’s life, with larger health disparities among younger individuals (Bränström et al., 2016). The authors hypothesized that these differences may be due to higher levels minority stress experiences for younger individuals (Bränström et al., 2016). It is possible that like physical health, the relationship between mental health conditions, such as EDs, and sexual orientation fluctuates over the lifespan and the differing ages of the samples account for divergent results. Alternatively, both past studies used dichotomous yes-or-no questions to assess lifetime bulimia nervosa diagnoses and purging behaviors (Simone et al., 2020; Watson et al., 2017). It is possible the Likert scale of the EPSI represents a more nuanced assessment of purging behaviors, resulting in dissimilar findings from past research.

This study has limitations that are worth noting. First, most of the men in this sample did not report current or lifetime EDs (see Table 1). In the future, it may be useful to understand the psychometric properties of the EPSI in clinical samples of SM men. However, this study provides useful information on EPSI norms for non-treatment seeking SM men. Second, gay and bisexual individuals made up the largest groups within this dataset and we were able to look at group differences for only these groups. An important next step could be to evaluate group differences in ED symptoms across other SM identities. Third, the present sample did not include a reference group (e.g., heterosexual women) and therefore, we were unable to conduct measurement invariance analyses. Future research should assess measurement invariance across groups to better understand whether mean scores on the EPSI represent the same constructs in non-minority reference groups and SM men. An important continuation following this first step would be to evaluate measurement invariance across gay and bisexual men. Furthermore, the present sample was primarily comprised

of individuals living in four affluent nations in which Western lifestyles are common. It is important that future research examines differences between nations with varying levels of affluence and cultural influences. We also recognize that there are numerous cultural influences within each nation. Therefore, future research should investigate the intersection of sexual identity and the diverse cultures within a nation. Finally, when assessing disordered eating in men, it is important to keep in mind that the thinness-oriented diagnostic framework of EDs was created based on the experiences of women. Research suggests that men may not conceptualize their disordered eating behaviors in the same manner as women and may endorse symptoms such as loss of control or purging behaviors less frequently (see Murray et al., 2017 for review). The EPSI was validated in both men and women and includes a number of items (e.g., the Muscle Building scale) that are focused on the pursuit of a muscularity-oriented appearance ideal. However, there may be aspects of disordered eating that are particularly pertinent to men, yet remain beyond the field's current schematization of disordered eating. Additional qualitative research in this area may be particularly valuable. Although research on men and disordered eating is rapidly growing, future work is needed to thoroughly understand the presentation of disordered eating in men. As SM men experience EDs at rates higher than their heterosexual counterparts, the lens through which we conceptualize eating pathology broadly may be particularly impactful to this population.

Despite limitations, the present study has numerous strengths. This is the first study to test and replicate the factor structure of the EPSI in SM men. The large, international sample of SM men, a group that has been historically underrepresented in research, is a major strength of this paper. Additionally, the large sample of SM men afforded the opportunity to investigate differences on EPSI scales for both gay and bisexual men. This is important because SM individuals are frequently aggregated in research studies, which precludes our ability to understand nuances among the diverse individuals within the LGBTQ+ community.

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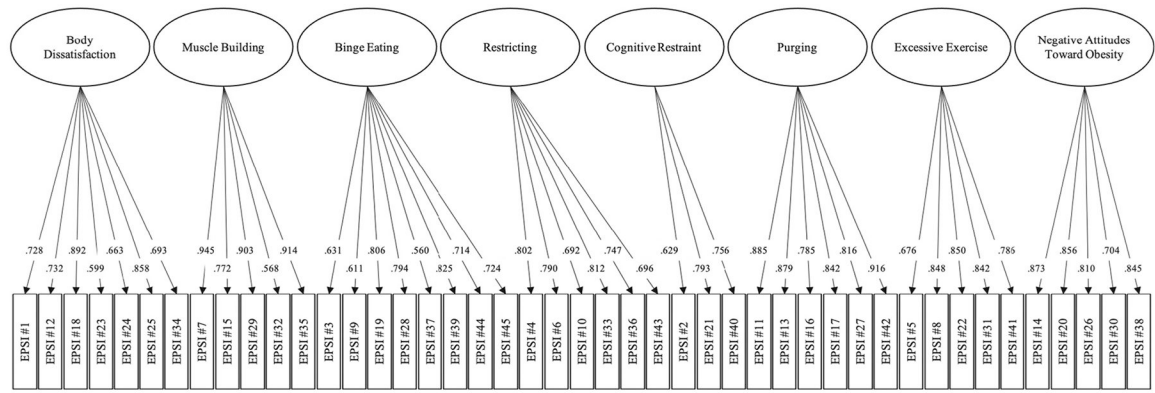
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**Fig. 1.**  
 EPSI item loadings on designated latent factors.  
*Note.* EPSI = Eating Pathology Symptoms Inventory. All factor loading estimates were significant at  $p < .001$ . Covariances between factors are presented in Table 4.

Table 1

Demographic characteristics.

	Asexual		Gay		Bisexual		Heterosexual/straight		Pansexual		Questioning		Something else		Queer		Prefer not to answer	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Total	2		582	102	4		9	12	6		3		1					
Country																		
Australia	0		114	20	0		2	0	1		1		0					
Canada	1		58	12	0		1	2	1		0		0					
UK	0		124	19	0		0	3	1		0		0					
USA	1		268	46	4		6	7	2		2		2		1			
Other	0		17	3	0		0	0	1		0		0		0			
Gender																		
Cisgender	2		560	91	3		6	12	4		1		0					
Something else	0		22	10	1		2	0	2		2		1					
Lifetime eating disorder																		
No	1		498	89	3		8	10	1		3		1					
Yes	0		26	1	0		1	1	0		0		0					
Suspect	1		42	10	0		0	1	1		0		0					
Lifetime diagnosis																		
AN	0		12	1	0		0	0	0		0		0					
ARFID	0		4	0	0		0	0	0		0		0					
BED	0		7	0	0		1	0	0		0		0					
BN	0		15	0	0		1	1	0		0		0					
OSFED	0		0	1	0		0	0	0		0		0					
Pica	0		0	0	0		0	0	0		0		0					
Rumination	0		0	0	0		0	0	0		0		0					
USFED	0		3	0	0		0	0	0		0		0					
Current eating disorder																		
No	0		33	7	0		0	0	0		0		0					
Yes	0		9	0	0		0	0	0		0		0					
Suspect	1		26	4	0		0	0	0		0		0					

	Asexual		Gay		Bisexual		Heterosexual/straight		Pansexual		Questioning		Something else		Queer		Prefer not to answer		
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	
Current diagnosis																			
AN	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARFID	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BED	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BN	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OSFED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rumination	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USFED	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Asexual		Gay		Bisexual		Heterosexual/straight		Pansexual		Questioning		Something else		Queer		Prefer not to answer	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Current age	40.50 (20.51)	36.81 (12.89)	36.52 (15.51)	46.00 (15.12)	35.89 (14.40)	35.50 (13.93)	37.17 (17.17)	34.67 (4.16)	19.00									
BMI	26.23 (2.60)	26.09 (5.95)	25.73 (5.96)	27.67 (6.26)	27.12 (7.29)	26.32 (4.26)	26.94 (10.52)	25.59 (1.46)	20.18									
SES ladder	5 (1.41)	5.83 (1.86)	5.97 (2.02)	7.50 (1.92)	4.78 (2.11)	5.08 (2.50)	5.83 (1.17)	6.00 (2.00)	4.00									
Age of onset: diagnosis	-	17.33 (5.68)	14	-	13	22	-	-	-									
Age of onset: symptoms	19	15.02 (3.91)	15.1 (4.63)	-	13	17.00 (1.414)	14	-	-									

*Note.* Lifetime and current eating disorder diagnoses were self-reported. Participants that endorsed “suspect” have not been formally diagnosed, but suspect that they have an eating disorder. Age of onset: diagnosis refers to the age at which the person’s eating disorder was diagnosed. Age of onset: symptoms refer to the age at which the person’s eating disorder symptoms began. Data on age, SES ladder, and age of onset are means and standard deviations. Data on country, gender, and eating disorder diagnoses are the number of persons that have indicated that their sexual identity falls within each descriptive category. Standard deviations are not reported for categories in which data were only available from one participant. Participants were allowed to select more than one lifetime diagnosis. Only persons that endorsed having a lifetime diagnosis were asked about current diagnosis. One person did not report their sexual identity and is not included in this table. SES ladder is self-reported data in which participants were asked to rate their socioeconomic status on a scale from 1 to 10 with 10 being the highest. The following abbreviations are used: UK = United Kingdom, USA = United States of America, AN = anorexia nervosa, ARFID = avoidant/restrictive food intake disorder, BED = binge eating disorder, BN = bulimia nervosa, OSFED = other specified feeding and eating disorder, SES = socioeconomic status, USFED = unspecified feeding or eating disorder.

Table 2

Race and ethnicity data.

	Asexual	Gay	Bisexual	Heterosexual/straight	Pansexual	Questioning	Something else	Queer	Prefer not to answer
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Australia	0	1	0	0	1	0	0	0	0
Aboriginal or Torres Strait Islander									
Asian	0	9	0	0	0	0	0	0	0
Black	0	0	0	0	0	0	0	0	0
Hispanic, Latino, or Spanish	0	0	0	0	0	0	0	0	0
Middle Eastern or North African	0	0	0	0	0	0	0	0	0
None of the above	0	0	0	0	0	0	0	0	0
Pacific Islander	0	0	0	0	0	0	0	0	0
Prefer not to say	0	0	0	0	0	0	0	0	0
White	0	55	10	0	0	0	1	0	0
Canada	0	2	0	0	0	0	0	0	0
Asian	0	1	0	0	0	0	0	0	0
Black	0	3	0	0	0	0	0	0	0
Hispanic, Latino, or Spanish	0	0	0	0	0	0	0	0	0
Inuit	0	0	0	0	0	0	0	0	0
Métis	0	1	0	0	0	0	0	0	0
Middle Eastern or North African	0	0	0	0	0	0	0	0	0
None of the above	0	0	0	0	0	0	0	0	0
Prefer not to say	0	0	0	0	0	0	0	0	0
White	0	23	8	0	1	1	1	0	0
UK	0	3	2	0	0	0	1	0	0
Asian	0	3	0	0	0	0	0	0	0
Black	0	0	0	0	0	0	0	0	0
Hispanic, Latino, or Spanish	0	0	0	0	0	0	0	0	0
Middle Eastern or North African	0	0	0	0	0	0	0	0	0
None of the above	0	3	1	0	0	0	0	0	0
Prefer not to say	0	0	0	0	0	0	0	0	0
White	0	63	9	0	0	2	0	0	0
USA	0	5	1	0	0	0	0	0	0
American Indian or Alaska Native									
Asian	0	6	0	0	0	0	0	0	0



	Asexual	Gay	Bisexual	Heterosexual/straight	Pansexual	Questioning	Something else	Queer	Prefer not to answer
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Black	0	21	8	1	1	0	0	0	0
Hispanic, Latino, or Spanish	0	22	4	0	0	1	0	0	1
Middle Eastern or North African	0	1	0	0	0	0	0	0	0
Native Hawaiian or Other Pacific Islander	0	2	0	0	0	0	0	0	0
None of the above	0	3	1	0	0	0	0	0	0
Prefer not to say	0	1	0	0	0	0	0	0	0
White	0	92	20	2	0	3	0	1	0

Note: Numbers in columns represent the number of persons that have indicated that their sexual identity falls within each descriptive category. UK=United Kingdom; USA = United States of America.

**Table 3**

Exploratory factor analysis results for 1- through 8-factor EPSI models.

<b>Fit indices</b>					
<b>Model</b>	<b><math>\chi^2</math></b>	<b><i>df</i></b>	<b>CFI</b>	<b>TLI</b>	<b>RMSEA</b>
1-Factor	13,918.720	945	0.471	0.445	0.142
2-Factors	10,343.025	901	0.615	0.577	0.124
3-Factors	6916.644	858	0.753	0.715	0.102
4-Factors	4927.527	816	0.832	0.796	0.086
5-Factors	3657.938	775	0.882	0.850	0.074
6-Factors	2643.423	735	0.922	0.895	0.062
7-Factors	1948.215	696	0.949	0.927	0.051
8-Factors	1600.283	658	0.962	0.942	0.046

*Note.* Model fit indices for each EPSI factor model. CFI = Comparative Fit Index (CFI), TLI = Tucker-Lewis Index, RMSEA = Root Mean Square Error of Approximation.

Table 4

EPISI scale factor covariances.

	Binge eating	Restricting	Cognitive restraint	Purging	Excessive exercise	Negative attitudes toward obesity	Muscle building
Body dissatisfaction	0.605 <sup>**</sup> (0.027)	0.349 <sup>**</sup> (0.036)	0.384 <sup>**</sup> (0.040)	0.622 <sup>**</sup> (0.031)	0.212 <sup>**</sup> (0.040)	0.228 <sup>**</sup> (0.039)	0.280 <sup>**</sup> (0.038)
Binge eating	–	0.044 (0.041)	0.193 <sup>**</sup> (0.044)	0.540 <sup>**</sup> (0.038)	0.126 <sup>*</sup> (0.041)	0.286 <sup>**</sup> (0.038)	0.148 <sup>**</sup> (0.042)
Restricting	–	–	0.153 <sup>*</sup> (0.045)	0.302 <sup>**</sup> (0.047)	0.162 <sup>**</sup> (0.042)	0.107 <sup>*</sup> (0.041)	0.178 <sup>**</sup> (0.043)
Cognitive restraint	–	–	–	0.467 <sup>**</sup> (0.045)	0.655 <sup>**</sup> (0.029)	0.270 <sup>**</sup> (0.042)	0.345 <sup>**</sup> (0.041)
Purging	–	–	–	–	0.290 <sup>**</sup> (0.047)	0.262 <sup>**</sup> (0.044)	0.238 <sup>**</sup> (0.049)
Excessive exercise	–	–	–	–	–	0.253 <sup>**</sup> (0.038)	0.652 <sup>**</sup> (0.027)
Negative attitudes toward obesity	–	–	–	–	–	–	0.238 <sup>**</sup> (0.040)

Note. Values in the table are covariance estimate (standard error).

<sup>\*\*</sup> =  $p < .001$ ,

<sup>\*</sup> =  $p < .01$ .

**Table 5**

EPSI scale score differences between gay and bisexual men.

EPSI scale	<i>df</i>	<i>MS</i>	<i>F</i>	$\eta_p^2$	Gay men ( <i>n</i> = 555)	Bisexual men ( <i>n</i> = 92)
					<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )
Body dissatisfaction	1	26.62	0.70	0.001	12.14 (6.27)	11.55 (5.66)
Cognitive restraint	1	0.25	0.03	0.000	4.98 (2.84)	5.03 (2.54)
Binge eating	1	180.81	4.64*	0.007	10.51 (6.16)	12.02 (6.68)
Restricting	1	12.94	0.46	0.001	6.84 (5.37)	6.43 (4.91)
Excessive exercise	1	8.99	0.39	0.001	6.45 (4.86)	6.78 (4.28)
Purging	1	20.03	1.24	0.002	2.31 (4.11)	1.80 (3.50)
Negative attitudes toward obesity	1	0.06	0.00	0.000	8.02 (5.02)	8.04 (4.68)
Muscle building	1	6.22	0.24	0.000	5.99 (5.12)	6.27 (4.70)

Note. EPSI = Eating Pathology Symptoms Inventory; *MS* = mean squares;  $\eta_p^2$  = partial eta-squared;

\*  $p < .05$ ;

*M* = mean; *SD* = standard deviation. Thresholds for partial eta-squared are 0.01 (small), 0.06 (medium), and 0.14 (large).