

**The Role of Positive Body Image,
Emotion Regulation, and Minority
Stress in the Eating Behaviors of LGB+
and heterosexual adults**

Márcia Sofia Rodrigues de Oliveira

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Universidade do Porto

Faculdade de Psicologia e de Ciências da Educação

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Dissertação apresentada no Mestrado Integrado de Psicologia, Faculdade de Psicologia e de Ciências da Educação da Universidade do Porto, orientada pela Prof.^a Doutora **Raquel Barbosa** e coorientada pelo Prof. Doutor **Jorge Gato** (FPCEUP).

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The present study is part of the doctoral research project: “*O papel da imagem corporal, do stress minoritário e da satisfação sexual no comportamento alimentar em pessoas heterossexuais e lésbicas, gays e bissexuais (LGB)*”. As a collaborator in this research project, I participated in the construction of the various web pages for dissemination of the study (e.g., Facebook, Instagram, Link Tree, E-mail), selected and contacted several LGBTQ+ associations, tested the online questionnaire, selected variables, and analyzed data pertaining to the present study.

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Resumo

O objetivo do presente estudo foi duplo. Primeiramente, procuramos comparar o comportamento alimentar disfuncional dos indivíduos LGB+ ($n = 255$) e heterossexuais ($n = 1,037$). Em segundo lugar, controlando as variáveis sociodemográficas (idade, índice de massa corporal (IMC), gênero, nível educacional, regime alimentar restritivo (RAR), ingestão de medicação e atividade física, exploramos o papel da apreciação corporal, da regulação emocional e da discriminação quotidiana (tratamento injusto e rejeição pessoal) nos comportamentos alimentares disfuncionais dos LGB+ e heterossexuais. O papel das variáveis do stress minoritário (identidade LGBT+, abertura à família e ao mundo, ligação à comunidade e pressão da comunidade) foi também explorado entre os indivíduos LGB+. Duas MANCOVAs, com a identidade sexual como fator entre sujeitos (LGB+ vs. Heterossexuais) foram realizadas para explorar diferenças nos comportamentos alimentares (emocional e restritivo) dos participantes entre os 18 e os 65 anos, com idade, IMC, nível educacional, RAR e atividade física como covariáveis. Foram também realizadas quatro regressões hierárquicas com as variáveis sociodemográficas inseridas no primeiro passo (idade, IMC, nível educacional, RAR e atividade física), variáveis psicológicas no segundo passo (apreciação corporal, regulação emocional e discriminação quotidiana) e o comportamento emocional e restritivo como variáveis dependentes. Os modelos de regressão para os participantes LGB+ incluíram variáveis de stress minoritário no terceiro passo (abertura, ligação à comunidade e pressão da comunidade). Os resultados mostraram que o IMC foi o preditor sociodemográfico mais importante. Apenas entre os indivíduos heterossexuais, o sexo foi um preditor significativo do comportamento alimentar emocional. Entre os preditores psicológicos, a apreciação corporal foi o mais significativo. A regulação emocional mostrou um padrão diferente de associações em função do comportamento alimentar e da identidade sexual. Finalmente, a ligação à comunidade foi o único preditor minoritário do comportamento alimentar restritivo. Este estudo contribuiu para uma maior compreensão dos comportamentos alimentares disfuncionais de uma forma inclusiva. A imagem corporal e a regulação emocional são áreas importantes de intervenção no que diz respeito aos comportamentos alimentares de indivíduos LGB+ e heterossexuais. A ligação à comunidade pode ser um fator de proteção a ser explorado no caso dos indivíduos LGB+.

Palavras-chave: comportamento alimentar, LGB+, apreciação corporal, regulação emocional, stress minoritário

Abstract

The aim of the current study was twofold. First, we sought to compare the dysfunctional eating behavior of LGB+ ($n = 255$) and heterosexual individuals ($n = 1,037$). Second, controlling for sociodemographic characteristics (age, body mass index (BMI), gender, education level, intake of medication, having a restrictive diet regimen (RDR), and physical activity), we explored the role of both body appreciation, emotion regulation and everyday discrimination (unfair treatment and personal rejection) in the dysfunctional eating behaviors of LGB+ and heterosexual people. The role of minority stress variables (LGB identity, outness to family, outness to world, community connectedness, and community pressure) was also explored among LGB+ individuals. Two MANCOVA's with sexual identity as a between-subjects factor (LGB+ vs. heterosexual) were run to explore differences in eating behaviors (emotional and restrained) of participants between 18 and 65 years, with age, BMI, education level, RDR, and physical activity as covariates. Four hierarchical regressions were also conducted with sociodemographic variables inserted in the first step (age, BMI, education levels, RDR, and physical activity), psychological variables in the second step (body appreciation, emotion regulation, and everyday discrimination), and emotional and restrained eating behaviors as dependent variables. Regression models for the LGB+ participants included minority stress variables in the third step (outness, community connectedness and community pressure). Results showed that BMI was the most important sociodemographic predictor. Only among heterosexual individuals, gender was a significant predictor of emotional eating behavior. Among psychological predictors, body appreciation was the most significant one. Emotion regulation showed a different pattern of associations as a function of the eating behavior and the sexual identity in question. Finally, community connectedness was the only minority stress predictor of restrained eating behavior. Overall, this study contributes to an increased understanding of dysfunctional eating behaviors in an inclusive way. Positive body image and emotion regulation are important areas of intervention regarding eating behaviors of LGB+ and heterosexual individuals. Community connectedness may be a protective factor to explore in the case of LGB+ individuals.

Keywords: eating behavior, LGB+, body appreciation, emotion regulation, minority stress

Resumé

L'objectif de la présente étude était double. Tout d'abord, nous avons essayé de comparer le comportement alimentaire dysfonctionnel des personnes LGB+ (n = 255) et hétérosexuelles (n = 1 037). Deuxièmement, nous avons étudié les variables sociodémographiques (âge, indice de masse corporelle (IMC), sexe, niveau d'éducation, régime alimentaire restrictif (RAR), prise de médicaments et activité physique), ainsi que le rôle de l'appréciation du corps (AC), de la régulation émotionnelle (RE) et de la discrimination quotidienne (traitement injuste et rejet des personnes) dans les comportements alimentaires dysfonctionnels des individus LGB+ et hétérosexuels. Le rôle des variables de stress pour les minorités (identité LGBT, ouverture à la famille et au monde, attachement à la communauté et pression communautaire) a également été exploré chez les personnes LGB+. Deux MANCOVA, avec l'identité sexuelle comme facteur inter-sujets (LGB+ vs. Hétérosexuel) ont été effectuées pour explorer les différences dans les comportements alimentaires (émotionnels et restrictifs) des participants âgés de 18 à 65 ans, avec l'âge, l'IMC, le niveau d'éducation, le RAR et l'activité physique comme covariables. Quatre régressions hiérarchiques ont également été effectuées avec des variables sociodémographiques intégrées dans la première niveau (âge, IMC, niveau d'éducation, RAR et activité physique), des variables psychologiques dans la deuxième niveau (AC, RE et discrimination au quotidien) et des comportements émotionnels et restrictifs comme variables dépendantes. Les modèles de régression pour les participants LGB+ ont inclus les variables de stress des minorités dans la troisième niveau (ouverture, attachement à la communauté et pression de la communauté). Les résultats ont montré que l'IMC était le principal prédicteur sociodémographique. Ce n'est que chez les personnes hétérosexuelles que le sexe était un prédicteur significatif du comportement alimentaire émotionnel. Parmi les prédicteurs psychologiques, AC était la plus significative. La régulation émotionnelle a montré un modèle différent d'associations en fonction du comportement alimentaire et de l'identité sexuelle. Enfin, l'attachement à la communauté était le seul prédicteur minoritaire du comportement alimentaire restrictif. Cette étude a contribué à une meilleure compréhension des comportements alimentaires dysfonctionnels d'une manière inclusive. AC et la RE sont des domaines d'intervention importants concernant les comportements alimentaires des personnes LGB+ et hétérosexuelles. L'attachement à la communauté peut être un facteur de protection à qu'il convient d'examiner dans le cas des personnes LGB+.

Mots clés : comportement alimentaire, LGB+, AC, RE, stress des minorités.

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List of Abbreviations and Acronyms

EEB	Emotional Eating Behavior
REB	Restrained Eating Behavior
BMI	Body Mass Index
RDR	Restrictive Diet Regimen
CC	Community Connectedness
CPIB	Community Pressure to have an Ideal Body
MSM	Minority Stress Model
ER	Emotion Regulation
LGB+	Lesbian, Gay, Bisexual and other Sexual Minority Individuals

Introduction

Dysfunctional eating behavior seems to affect all individuals, regardless of gender, age, economic class, “race”, and ethnicity. One group that has received considerable attention in recent years are sexual minorities, which includes individuals who do not identify as heterosexual. Findings regarding the eating behavior of lesbian, gay male, bisexual, and other sexual minority individuals’ (LGB+) suggest a critical health problem. In fact, according to the review by Parker and Harriger (2020) the LGB+ population tends to be at greater risk for dysfunctional eating behaviors when compared to their heterosexual counterparts.

In general, dysfunctional eating behaviors have been associated with a higher body mass index (BMI) (Koenders & van Strien, 2011). The mediating role of variables such as body image and internalization of cultural ideals about thinness and beauty has also been highlighted (Voelker et al., 2015). Among psychological factors that have been found to predict dysfunctional eating behavior are body satisfaction (Loth et al, 2014), impulsivity (Izydorczyk et al., 2019), suppression and denial of own emotional states (Izydorczyk et al., 2019), and everyday discrimination (Yoon et al., 2021).

The minority stress model (MSM) has been proposed as a primary explanation model for health disparities among sexual and gender minorities (Meyer, 1995, 2003). The MSM is a theoretical framework that examines the impact of individual, social, and contextual variables on mental health outcomes among minority samples (Meyer, 1995, 2003). Meyer (2003) suggested that unhealthy behaviors occur because of a set of constant society-induced stressors, often leading to harassment and discrimination against a minority group. In fact, a meta-analysis demonstrated that LGB+ individuals are more likely to experience a variety of forms of harassment and victimization than heterosexual individuals: approximately 56% of LGB+ people reported verbal harassment, 50% sexual harassment, and 44% discrimination (Katz-Wise & Hyde, 2012). This process requires an individual to adapt and respond to their social environment, which significantly impacts their physical and mental health (Lick et al., 2013).

Our goal in this study was to compare the eating behavior of LGB+ and heterosexual individuals. Also, we intended to explore the role of sociodemographic (age, gender, education level, body mass index, intake of medication, having a restrictive diet regimen, and physical activity) and psychological (body appreciation, emotion regulation,

unfair treatment and personal rejection) variables in the eating behaviors of LGB+ and heterosexual adults. In the case of LGB+ people, we also aimed to look at the role of minority stress variables (LGB identity, outness, community connectedness, community pressure to have an ideal body) on dysfunctional eating behaviors. Next, we will review literature about the eating behavior of heterosexual and sexual minority individuals. We will then present the minority stress model and its pertinence in understanding LGB+ individuals' eating behavior. Finally, we will explore the role played by positive body image and emotion regulation in eating behavior.

Dysfunctional eating behavior, sexual identity, and gender

Emotional eating behavior (EEB) is the tendency to overeat in response to negative emotions (van Strien et al., 1986; Viana & Sinde, 2003). This behavior has been characterized as an avoidant coping strategy used to alleviate negative emotional states (Braet et al., 2014) and has also been associated with an inability to adequately regulate emotional states, especially painful or stressful ones (Evers et al., 2010). In turn, restrained eating behavior (REB) is characterized as the tendency to restrict dietary intake to lose weight or avoid weight gain (Pietrowsky et al., 2003). Dysfunctional eating behaviors can have a negative impact on a person's life and have been linked to negative mental and physical health (Hudson et al., 2007).

Dysfunctional eating seems to affect many LGB+ individuals (Austin et al., 2009; Harvey & Robinson, 2003; Russell & Keel, 2002). In fact, although a few studies revealed there are no differences in eating behaviors as a function of sexual identity (Cella et al., 2010; Share & Mintz, 2002), the majority of research reveals that sexual minority population presents higher rates of dysfunctional eating behaviors than their heterosexual peers (Calzo et al., 2017; Laska et al., 2015; Kamody et al., 2020; Parker & Harriger, 2020; Rainey et al., 2018; Rutters et al., 2008; Shearer et al., 2015; Watson et al., 2017; Yean et al., 2013).

Gender differences seem to play a significant role as a risk factor for developing dysfunctional eating behaviors. The American Psychiatric Association (1994) estimated that 90% of the population with eating disorders was female. Also, Elgin and Pritchard (2006) found that women scored higher on measures of dysfunctional eating and body dissatisfaction compared to men. Cella and colleagues (2013) found a positive association between dysfunctional eating and femininity and a negative one between the former and

masculinity. A meta-analysis by Grabe and colleagues (2008) showed that women were more susceptible to eating disorders because they felt dissatisfied with their body image.

There is some evidence that gay and bisexual men report higher levels of dysfunctional eating behaviors and body dissatisfaction than their heterosexual peers (Feldman & Meyer, 2007; Moore & Keel, 2003). Male attractiveness seems to be culturally associated with increased muscle definition (for heterosexual individuals) and thinness and leanness (for gay men) (Smith et al., 2011). Furthermore, gay males may feel pressure to appear fit and muscular to combat stereotypes depicting gay men as feminine (Drummond, 2005). This way, certain gay male subcultures seem to place a great emphasis and importance on the lean and muscular body. However, Smith and colleagues (2011) showed that body fat dissatisfaction, but not muscularity dissatisfaction predicted dysfunctional eating behaviors.

Findings regarding women are less conclusive (Feldman & Meyer, 2007; Shearer et al., 2015; Yean et al., 2013). In general, literature has found more similarities than differences in dysfunctional eating behaviors among women, independently of their sexual identity (e.g., Feldman & Meyer, 2007; Moore & Keel, 2003; Share & Mintz, 2002). However, Henn and colleagues (2019) reported that heterosexual women revealed higher levels of dysfunctional eating behaviors when compared with their lesbian and bisexual female peers. Siever (1994) showed that one's appearance seems less important for lesbian women than heterosexual women. Heterosexual women are exposed to cultural messages about ideal physical appearance to be thin and attractive and may come to adopt these cultural values to please heterosexual men.

Dysfunctional eating behaviors among LGB+ individuals: the role of minority stress variables

Minority stress broadly captures the unique types of stress faced by sexual minority individuals due to stigma, prejudice, and discrimination toward their sexual identity that occurs in addition to general life stress. Meyer (2003) classified minority stressors into two categories: distal and proximal. Distal stressors include external events such as experiences of discrimination, violence, and harassment related to psychological distress, physical symptoms, and substance abuse. Proximal stressors include subjective stressful experiences such as internalized homophobia, expectations of rejection, and

stress-related to concealment of sexual identity. Research indicates that exposure to distal stressors leads to proximal stressors in sexual minority populations (Bridges et al., 2020).

Exposure to minority stressors increases mental health risk by elevating vulnerability processes, such as emotion regulation difficulties (Hatzenbuehler, 2009). Research has identified protective factors for the LGB+ population for coping with the effects of minority stressors; social support, positive coping strategies (Meyer, 2003), being in a stable relationship, masculinity (in the case of gay men), self-compassion (Cella et al., 2013; Meyer et al., 2001), body appreciation (Tylka & Wood-Barcalow, 2015a), and a positive perception of the self (Smolak, 2012). The MSM also proposes that being connected to the LGB+ community provides coping resources (Frost & Meyer, 2012; Meyer, 2003).

Literature evidences a complex relationship between minority stress and eating behaviors. Individuals from sexual minority groups that perceive higher stigma are more likely to report dysfunctional eating behaviors (Bell et al., 2019; Mason et al., 2017). In turn, they can use dysfunctional eating behaviors and a higher body mass to cope with minority stress (Mason & Lewis, 2015; Rainey et al., 2018). Minority stress may be linked to body image. For young men who have sex with men, one study found that internalized negative attitudes towards homosexuality and sexual identity predicted overall body dissatisfaction, muscularity dissatisfaction, and body fat dissatisfaction (Siconolfi et al., 2016). Kimmel and Mahalik (2005) have specifically applied the minority stress framework better to understand the body image challenges for gay men. In line with Siconolfi et al. (2016), they found that sexual minority men who experienced acts of discrimination, perceived stigma, and internalized homophobia endorsed more significant levels of body dissatisfaction. A minority stress framework has also been applied to the study of body image among sexual minority women (Morrison & McCutcheon, 2011), specifically the mental health outcomes of sexual minority women who experience discrimination due to their body size (Johns et al., 2017). They found that body image may be understood as compensatory asset that can aid in sexual minority women's coping with experiences of fat stigma.

Positive body image, emotion regulation and eating behavior

Body image disturbance is a core symptom of eating disorders and eating problems. Body dissatisfaction is implicated in a range of public health concerns,

including impaired psychological health (e.g., depression) and eating- and weight-related problems (e.g., eating disorders, obesity) (Bucchianeri, & Neumark-Sztainer, 2014). The role of sexual identity in body image is understudied, and findings to date are mixed. To better understand this body of research, Basabas and colleagues (2019) showed that heterosexual men reported higher body satisfaction than heterosexual women. Comparisons between LGB+ and heterosexual population showed that gay men reported lower body satisfaction than heterosexual men. Gay men also reported lower body satisfaction than lesbian women, and did not differ significantly from heterosexual women. For heterosexual and lesbian women's body satisfaction did not differ significantly. Also, Jinbo He and colleagues (2020) recently conducted a quantitative synthesis of 30 years of research findings about the role of gender. Results showed that men reported higher levels of body appreciation than females, with a small effect size.

There is a growing interest in positive body image as a protective factor against body dissatisfaction and its related consequences (Tylka & Wood-Barcalow, 2015a). However, positive body image is not on the same continuum as negative body image, nor should it be represented as low levels of negative body image (Tylka & Wood-Barcalow, 2015a). Positive body image is a broad and multidimensional concept that involves love and respect for the body, allowing individuals to appreciate its uniqueness and functionality (Tylka & Wood-Barcalow, 2015b). People with a positive body image accept their perceived body imperfections or deviations from cultural ideals, have a mindful connection with their body's needs, and interpret incoming information in a body-protective manner. Body appreciation is considered a key component of positive body image and constitutes the most common way to operationalize this construct. Body appreciation is related to adaptive media strategies (e.g., protective filtering), increased self-esteem, and proactive coping strategies, even when controlling for appearance dissatisfaction (Tylka & Wood-Barcalow, 2015b) and might also reduce the effects of thin-ideal media exposure (Andrew et al., 2015). Higher levels of body appreciation have also been associated with both lower levels of maladaptive eating behaviors (e.g., binge eating, purging, restricting; Gillen, 2015; Tylka & Wood-Barcalow, 2015b) and higher levels of intuitive eating behavior (i.e., adaptive eating in response to individuals' internal hunger and satiety cues as opposed to emotional cues; Tylka & Van Diest, 2013).

Some researchers have emphasized the importance of exploring positive body image among individuals of diverse sexual identities (Tiggemann, 2015). However, little attention has been given to sexual minority individuals. VanKim and colleagues (2016)

interviewed college students to perceive their sexual identity-related barriers to engaging in physical activity, eating healthfully and maintaining healthy body images. The researchers found three sub-themes related to the theme of body image. Two of them captured negative body image attitudes. The third sub-theme, endorsed only by women, related to positive body image, as captured by these participants supporting more significant number of intimate experiences with women of different body types, as well as acceptance of body diversity. This study shows that sexual minorities experience unique aspects of body image; however, the authors did not include validated measures of positive body image, such as the BAS-2. Another study that did include a measure of positive body image, specifically the BAS-2, investigated body appreciation among sexual minority men from a British community sample (Alleva et al., 2018). The researchers found that sexual minority men reported lower levels of body appreciation compared to heterosexual men. Besides, this study revealed that it is unclear whether the same differences in positive body image exist between sexual minority women and men as have been found among presumed heterosexual individuals (Alleva et al., 2018). Another study that assesses body appreciation exclusively between sexual minorities and heterosexual women found that body appreciation was higher for sexual minority females, even when controlling for demographic variables.. Yet, the effect of this difference was small (Winter et al., 2015). Despite some evidence about the importance of body appreciation, research on sexual minorities is very limited.

In the same way, the influence of emotion-related factors on dysfunctional eating behaviors has recently received a great deal of attention.

Behaviors such as binge eating, restrictive eating have been postulated as coping strategies to deal with negative emotional states (Aldao et al., 2010). Agüera and colleagues (2019) found that male and female patients with eating disorders showed more significant emotion regulation difficulties compared to healthy controls. Girls who reported higher levels of dysfunctional eating experienced increased frequency of negative affect, significantly greater difficulty identifying emotions, and less constructive coping with negative emotions (Sim & Zeman, 2006). Thus, emotion regulation has been suggested as an underlying transdiagnostic factor (Sloan et al., 2017). A considerable amount of research has linked poor emotion regulation (ER) to symptoms of psychopathology, particularly problematic alcohol, and substance use. Yet, there is a paucity of work examining these relationships among LGB+ individuals (Rogers et al., 2017).

Emotion regulation is defined as the process by which every person identifies, modulates, and expresses emotions (Gross, 1998). Adaptive emotion regulation, such as acceptance of emotions or controlling behaviors when distress is negatively associated with symptoms of psychopathology (Aldao et al., 2010), whereas maladaptive emotion regulation, such as limited access to adaptive emotion regulation skills, is positively associated with symptoms of anxiety, depression, eating disorders, alcohol and substance use disorders (Aldao et al., 2010; Shadur and Lejuez, 2015). Literature has shown that higher levels of maladaptive emotion regulation are associated with higher rates of substance disorders (Rogers et al., 2017), suicidality (Burton et al., 2013), depression, and anxiety (Schäfer et al., 2017) in the heterosexual population, yet there is a paucity of work examining these relationships in LGB+ individuals. While it has been established that being an LGB+ individual confers greater vulnerability for eating disorders, it is unclear whether specific emotion regulation deficits account for this increased risk. Recently, Gillikin and colleagues (2021) have explored this relationship in a sample of LGB+ adult individuals. The authors showed that specific emotion regulation deficits significantly mediated the relationship between minority groups and eating pathology, underscoring the importance of examining emotion regulation as a mechanism underlying higher rates of dysfunctional eating in LGB+ populations. In turn, the MSM states that coping resources (e.g., emotion regulation, social support) are key factors in the relationship between LGB+ stressors and an individual's development of a mental illness (Meyer, 2003).

The present study

Taking into account of reviewed studies, LGB+ individuals were expected to report higher levels of emotional and restrained eating behaviors than their heterosexual peers (hypothesis 1). Also, controlling for sociodemographic characteristics (age, gender, and education level) as well as health conditions (body mass index, intake of medication, having a restrictive diet regimen, and physical activity), we hypothesized that both psychological processes (body appreciation and emotion regulation) and everyday discrimination (unfair treatment and personal rejection) would predict dysfunctional eating behaviors both among LGB+ and heterosexual participants (hypothesis 2). Finally, we hypothesized that minority stress variables (LGB identity, outness to family, outness

to world, community connectedness, and community pressure) would further predict dysfunctional eating behaviors among LGB+ participants (hypothesis 3).

1. Method

1.1. Participants

The current study focused on the eating behaviors and associated variables of cisgender heterosexual and LGB+ individuals living in Portugal. A total of 1,399 individuals answered the questionnaire for the present study, but we only considered participants who fully answered the instruments related to our variables of interest. The final sample comprised 1,292 cisgender participants of which 255 self-identified as LGB+ (19.7%) and 1,037 as heterosexual (80.3%), ranging from 18 to 65 years ($M = 29.87$; $SD = 11.27$). Most participants were cisgender women (74.5%), and approximately two-thirds were in a relationship (68.1%) and had a higher education degree (66.6%). Most participants (79%) lived in an urban area in Portugal. When questioned about their daily intake of medication and practice of physical activity, approximately half of the participants reported taking medication daily (54.5%) and having a sedentary lifestyle (52.5%). Participants had an average body mass index of 24.33 kg/m^2 ($SD = 4.75$) and only a minority (15.6%) followed a restrictive diet regimen (vegan, paleo diet, ketogenic diet, or other). The sociodemographic characteristics of the participants are described in detail in Table 1.

Table 1*Sample Sociodemographic Characteristics (N=1,292).*

Variable	<i>n</i>	%
Gender		
Cisgender women	963	74.5%
Cisgender men	329	25.5%
Sexual Identity		
Lesbian women	28	2.2%
Gay men	70	5.4%
Bisexual individuals	110	8.5%
Asexual individuals	12	0.9%
Pansexual individuals	24	1.9%
Other	11	0.8%
Heterosexual individuals	1,037	80.3%
Place of Residence		
Urban	214	83.9%
Rural	41	16.1%
Education Level		
1 th - 4 th grade	6	0.5%
5 th - 6 th grade	5	0.4%
7 th - 9 th grade	12	0.9%
10 th -12 th grade	404	31.3%
Bachelor degree	23	1.8%
Degree	411	31.7%
Postgraduate course	67	5.2%
Masters	254	19.7%
Doctorate	110	8.5%
Civil Status		
Single	917	71.0%
Married	184	14.2%
Divorced	39	3.0%
Widow/er	4	0.3%
Nonmarital partnership	148	11.5%
Relationship Status		
Not in a relationship	407	31.5%
In a monogamous relationship	740	57.3%
In a non-monogamous relationship	32	2.5%
In a casual relationship without commitment	113	8.7%
Medication		
Yes	704	54.5%
No	588	45.5%
Restrictive Diet Regimen		
Yes	201	15.6%
No	1,091	84.4%
Physical Activity		
Yes	614	47.5%
No	678	52.5%

1.2. Variables and Instruments

Sociodemographic Questionnaire. With the goal of obtaining a thorough description of the participants, data collection started with a sociodemographic questionnaire. Participants were asked about their age, weight, height, gender, sexual identity, place of residence, education level, and relationship status. The body mass index was calculated through the equation $\text{weight}/\text{height}^2$. The remaining variables were measured using ordinal scales with different response options, as seen in Table 1. Participants were also presented with the following questions: (i) “At the moment, do you take any type of medication and/or supplementation?” (ii) “Do you have any specific restrictive dietary regimen? (e.g., vegan, paleo diet, ketogenic diet, others)?” (iii) “Do you practice any physical activity regularly?”. Composite variables were calculated for educational level (0 = less than 12th grade; 1 = higher education degree) and relationship status (0 = not in a relationship; 1 = in a relationship).

Eating Behavior. To characterize the eating behavior of the participants, we used the Dutch Eating Behavior Questionnaire (DEBQ; Van Strien et al., 1986; Viana & Sinde, 2003). This is a 33-item measure comprising three subscales: restrained, emotional, and external eating behavior. To accomplish the goal defined in our study, we used the emotional eating behavior (EEB) (e.g., “Do you have a desire to eat when somebody lets you down?”) and restrained eating behavior (REB) (e.g., “Do you deliberately eat less in order not to become heavier?”) subscales, with 10 items each. Items were rated on a 5-point Likert scale ranging from 1 (*never*) to 5 (*often*), with higher scores indicating a higher frequency of the behavior in question. In the present study, internal consistency, measured by Cronbach’s alpha, was high for both subscales (EEB: $\alpha = .95$; REB: $\alpha = .92$).

Body Appreciation (BAS). We used the Body Appreciation Scale – 2 (BAS-2; Tylka & Wood-Barcalow, 2015b; Lemoine et al, 2018; Torres et al, 2018), an instrument comprising 10 items rated on a 5-point Likert-type scale (e.g., “I feel good about my body”) ranging from 1 (*never*) to 5 (*always*), with higher scores reflecting greater levels of body appreciation. Recently, the psychometric properties were examined in a sample of sexual minority individuals (Soulliard & Vander Wal, 2019), and among Portuguese samples of young adults ($\alpha=.94$; Lemoine et al., 2018), and older adults ($\alpha=.88$; Meneses et al., 2019). In the current study, internal consistency, as measured by Cronbach’s alpha, was high ($\alpha = .95$).

Emotion Regulation. To assess emotion regulation, two subscales of the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004; Coutinho et al., 2010) were used: Impulse Control Difficulties (Impulse) and Limited Access to Emotion Regulation Strategies (Strategies), with seven items each, rated on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*), with higher scores suggesting greater problems with emotion regulation. Participants were asked about their capacity to regulate emotions (Impulse) (e.g., “I experience my emotions as overwhelming and out of control”); and about the strategies they used to do so (Strategies) (e.g., “When I’m upset, I believe that I will remain that way for a long time”). Both subscales demonstrated adequate internal consistency as measured by the Cronbach’s alpha (impulse: $\alpha = .87$ and strategies: $\alpha = .93$).

Discrimination. To capture how participants perceived how others treated them based on race, ethnicity, gender, age, religion, physical appearance, sexual identity, or other characteristics, we used the Perceived Discrimination Scale (PDS; Williams, 1997; Freitas et al., 2015). The Portuguese adaptation of the instrument comprises eight items distributed by two subscales: unfair treatment (e.g., “You are treated with less courtesy than other people are”) and personal rejection (e.g., “People act as if they think you are not smart.”). Participants rated each item on a Likert scale ranging from 0 (*never*) to 5 (*almost every day*). These items were added to create a total score, with higher scores reflecting more frequent experiences of discrimination. Besides, if the participants selected option 1 (“rarely”) or greater, were invited to choose one characteristic that was the main motive for the unfair treatment (e.g., nationality, sex, race, age, religion, height, weight, body appreciation, sexual identity, economic or education status, physical and mental condition, or another motive). The Cronbach’s alpha for the current study was high for both subscales (unfair treatment: $\alpha=.78$, personal rejection: $\alpha=.78$).

Identity Dissatisfaction. To measure sexual minority individual’s dissatisfaction with their sexual identity, we used the Identity Dissatisfaction subscale from the Lesbian, Gay, and Bisexual Identity Scale (LGBIS; Mohr & Kendra, 2011; Oliveira et al, 2012). This subscale measures negative feelings or shame about one’s sexual identity (e.g., “If it were possible, I would choose to be straight”). The five items were rated on a 7-point Likert scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*), with higher scores indicating higher dissatisfaction with sexual identity. This scale demonstrated very good internal consistency ($\alpha=.90$).

Outness. To understand participants' degree of revelation about their sexual identity, we used the Outness Inventory (OI; Mohr & Fassinger, 2000; Gato & Fontaine, 2014). Is an 11-item measure comprising three subscales: Family (e.g., mother), World (e.g., my work peers), and Religion ("religious leader"). The religion subscale was not used in the present study because Portugal is a secularized country, particularly among younger generations (Gato et al., 2020). Furthermore, we added two items to capture participants' outness to "Teachers" and "Family Doctor". This scale is rated on a 7-point Likert scale ranging from 1 (*this person definitely does not know about your sexual orientation status*) to 7 (*this person definitely knows about your sexual orientation status, and it is openly talked about*). Option 0 (*not applicable to your situation; there is no such person or group of people in your life*) was also used. Internal consistency values were good for both subscales (family: $\alpha=.82$ and world: $\alpha=.80$).

Connectedness to the LGBT community. The Community Connectedness Scale (Frost & Meyer, 2012), an 8-item instrument, was used to measure the sense of connectedness of sexual minority individuals to the LGBT community (e.g., "You feel you're a part of the LGBT community"). Items are rated on a Likert-type scale, ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*), with higher scores indicating greater feelings of connectedness with the LGBT community. The adaptation of the instrument to the Portuguese language included a process of translation and retroversion by a qualified professional. Subsequently, the face validity of this version was established based on a cognitive interview with a group of six Portuguese young sexual minority adults. Minor semantic adjustments to the items were made considering the given suggestions. The instrument yielded a high internal consistency ($\alpha=.91$).

Pressure from the LGBTQ+ community to have an ideal body. A single item was devised by researchers to capture the social pressure from the LGBTQ+ community to have an ideal body size or a certain body appearance ("Do you feel any pressure from the LGBTQ+ community to have a certain body appearance?"). This item was measured on a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*), with higher scores indicating higher pressure from the LGBTQ+ community.

Cronbach's alpha of all subscales for heterosexual and LGB+ participants can be consulted in Appendix A.

1.3. Procedure

Data were collected online between 21 December 2020 and 1 February 2021. Informed consent was presented on the first page of the online survey, and all participants were aware that their responses were confidential and that participation was voluntary and could be terminated at any chosen time. All the participants gave their consent for data entry into the study before starting the questionnaire. The filling of the online survey lasted approximately 20 minutes and participants were invited to share with researchers if any questions or commentaries arose. No identifying information was obtained, and no compensation was offered to participants. The online survey was hosted on UP Limesurvey and the study was approved for ethical requirements by the Faculty of Psychology and Education Sciences of the University of Porto (Ref. 2020/07-09).

The survey was advertised through social media accounts, namely Facebook, Instagram, and Link Tree, which researchers created. The study was publicized on LinkedIn and pages of interest to LGBTQ+ people (e.g., informal LGBTQ+ community groups), where participants could read about various aspects of the research. We also created an e-mail to reach organizations and associations and requested their assistance in the dissemination of our survey by sending a brief description of the study and the hyperlink to the questionnaire (e.g., *casa Qui*, *HeForShe*, *Associação esQcrever*, *Associação Plano I*, *Clube Safo*, *Associação amplos*, *It Gets Better Portugal*, *Rede ex aequo*). These correspondences proved useful in attaining support and participants for the study.

1.4. Data analysis

Data were screened for missing data and outliers. Missing data were minimal (less than 10% of the data), with a random pattern, and handled with the Expectation Maximization (EM) algorithm. Also, we conducted a data distribution analysis, considering skewness (values should be lower than 3) and kurtosis (lower than 8) for each item (Kline, 2011). Before explore MANCOVAs and to identified multivariate outliers we used squared Mahalanobis distance $<.05$ (Tabachnick & Fidell, 2013). Seventeen cases were eliminated.

Two multivariate analyses of covariance (MANCOVAs) were run to assess the mean differences in the subscales concerning emotional and restrained eating behavior as a function of participants' sexual identity (Heterosexual vs LGB+). Before running the MANCOVAs we identified potential covariates, using t-tests for independent samples and chi-square. Whenever

statistically significant differences between LGB+ and heterosexual individuals were detected in sociodemographic characteristics, these variables were controlled in all subsequent analyses. Two MANCOVA's were conducted with emotional and restrained eating behavior as outcome variables, and age, body mass index, education level, restrictive diet regimen, and physical activity as covariates.

Subsequently, four hierarchical regression models on eating behaviors were run separately for heterosexual and LGB+ participants. The first block of predictors encompassed the following sociodemographic control variables: gender (0 = *women*; 1 = *men*), age, BMI, educational level (0 = *less than 12th grade*; 1 = *higher education degree*), restrictive diet regimen (0 = *no*; 1 = *yes*) and physical activity (0 = *no*; 1 = *yes*). The second block included psychological variables: body appreciation, emotion regulation, and everyday discrimination (unfair treatment and personal rejection). Finally, in the case of regression models for LGB+ participants, we included a third block with minority stress variables as predictors: outness, community connectedness, and pressure from the LGBTQ+ community to have an ideal body. Tolerance and VIF were used as multicollinearity indexes (the most common cut-off used is a tolerance value < .10 equivalent to a VIF < 10). We also ensured that correlations among independent variables were below .70 and/or below the correlation between each independent variable and the dependent variable, therefore assuming the absence of multicollinearity (Hair et al., 2014). The following effect-size values were considered $|\eta p^2| = .01$ shows a small effect, $|\eta p^2| = .06$ indicates a moderate effect, and $|\eta p^2| = .138$ characterizes a large effect (Cohen, 1998). A significance value of $p < .050$ was considered for all analyses. All analyses were performed using IBM SPSS Statistics (Statistical Package for the Social Sciences) Version 27.0.

2. Results

As shown in Table 2, all variables had an approximately normal distribution concerning skewness (-.57 to 1.14) and kurtosis (-1.29 to 1.86).

Table 2
Descriptive Statistics for Study Variables

Variables	<i>N</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Sk</i>	<i>Ku</i>
EEB	1,292	2.47	0.95	1.00	5.00	0.49	-0.31
REB	1,292	2.31	0.85	1.00	4.90	0.42	-0.24
Body Appreciation	1,292	3.62	0.81	1.10	5.00	-0.37	-0.34
Impulse	1,292	1.94	0.81	1.00	5.00	1.06	0.65
Strategies	1,292	2.19	0.96	1.00	5.00	0.88	-0.14
Unfair Treatment	1,292	0.85	0.74	0.00	5.00	1.14	1.86
Personal Rejection	1,292	1.02	0.82	0.00	5.00	1.12	1.76
LGB Identity	255	2.83	1.03	1.00	5.80	1.04	0.25
Outness to Family	255	3.26	1.81	0.00	7.00	0.44	-0.09
Outness to World	255	2.70	1.52	0.00	7.00	0.52	-0.06
CC	255	3.56	0.87	1.00	5.00	-0.57	0.30
CPIB	255	2.66	1.42	1.00	5.00	0.26	-1.29

Note. EEB = Emotional Eating Behavior; REB = Restrained Eating Behavior; CC = Community Connectedness; CPIB = Community pressure to have an ideal body.

2.1. Effect of sexual identity on eating behavior

Two MANCOVA's were conducted with emotional and restrained eating behavior as outcome variables, and age, body mass index, education level, restrictive diet regimen, and physical activity as covariates (see Table 3 for differences between groups). All MANCOVA assumptions were met. As can be seen in Appendix B, dependent variables were correlated with each other (-.446** for LGB+ and .368** for heterosexual participants), and the Box's test of equality of covariance matrices value of 7.94 was associated with a *p* value of .048, which was interpreted as non-significant.

Table 3*Differences in Sociodemographic Variables as a Function of Study Groups*

Baseline characteristic	LGB+		Heterosexual		Group differences	<i>p</i>
	<i>n</i>	%	<i>n</i>	%		
Gender						
Cisgender women	163	63.9%	800	77.1%	$X^2(1) = 18.86$	<.001
Cisgender men	92	36.1%	237	22.9%		
Place of residence						
Urban	214	83.9%	812	78.3%	$X^2(1) = 3.95$.050
Rural	41	16.1%	225	21.7%		
Education Level						
Less than 12 th grade	111	43.5%	316	30.5%	$X^2(1) = 15.77$	<.001
Higher education	144	56.5%	721	69.5%		
Relationship status						
Not in a relationship	164	64.3%	721	69.5%	$X^2(1) = 2.58$.108
In a relationship	91	35.7%	316	30.5%		
Medication						
Yes	151	59.2%	553	53.3%	$X^2(1) = 2.86$.091
No	104	40.8%	484	46.7%		
RDR¹						
Yes	58	22.7%	143	13.8%	$X^2(1) = 12.50$	<.001
No	197	77.3%	894	86.2%		
Physical Activity						
Yes	98	38.4%	516	49.8%	$X^2(1) = 10.53$.001
No	157	61.6%	521	51.2%		
Variables						
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Age	28.18	11.00	30.29	11.30	$t(1290) = -2.68$.008
BMI ²	24.33	4.75	23.41	4.03	$t(349.3) = 2.84$.005

Note. ¹RDR = Restrictive Diet Regimen; ²BMI = Body Mass Index.

Results indicated a statistically significant multivariate effect of sexual identity on eating behavior, Pillais' trace = .005, $F(2,1284) = 3.14$, $p = .044$, $\eta p^2 = .005$. As shown in Table 4, a significant univariate effect on emotional eating behavior was also obtained, $F(1, 1285) = 5.37$, $p = .021$, $\eta p^2 = .004$. Thus, in partial accordance with hypothesis 1, LGB+ participants scored significantly higher in emotional eating behavior, but not on restrained eating behavior, relative to their heterosexual counterparts.

Table 4

Multivariate Analysis of Covariance of Group (LGB+ and Heterosexual) for Emotional and Restrained Eating Behavior.

Dependent variables		LGB+ individuals (<i>n</i> = 255)	Heterosexual individuals (<i>n</i> = 1,037)	<i>F</i> (1, 1285)	<i>p</i>	ηp^2
	<i>M</i>	2.66	2.42			
Emotional Eating Behavior	(<i>SD</i>)	(0.89)	(0.96)	5.37	.021	.004
	<i>M</i>	2.42	2.29			
Restrained Eating Behavior	(<i>SD</i>)	(0.91)	(0.83)	2.81	.094	.002

Note. *N* = 1,292. The MANCOVA's test regarding emotional and restrained eating behavior compares the respective mean ratings of sexual identity with age, body mass index, education levels, restrictive diet regimen, and physical activity as covariates.

2.2. Predictors of emotional and restrained eating behaviors for heterosexual and LGB+ participants

As a preliminary step for the hierarchical regression analyses, we examined bivariate Pearson correlations between the main study variables in the total sample (see Appendix B and C). Correlations were significant, with magnitudes ranging from small to moderate. All regression models presented results within the established cutoff values for multicollinearity (tolerance > .435; VIF < 1.018).

We ran four hierarchical regression models (two outcome variables across the two subsamples), with sociodemographic control variables entered in Step 1, psychological variables in Step 2, and minority stress variables in Step 3 (only for the LGB+ subsample). The independent variables included in each step of the regression models were correlated to our dependent variables. These analyses were run separately for LGB+ and heterosexual individuals.

Regarding the heterosexual subsample, the model predicting emotional eating behavior explained 31% of the variance (Table 5). Control variables entered in Step 1 explained 16% of the variance: being female, being younger, having a higher BMI, and having a higher education level predicted emotional eating behavior. Psychological variables entered in Step 2 further explained 14% of the variance: having a less body appreciation, being more impulsive, and reporting more feelings of personal rejection significantly predicted emotional eating behavior.

Table 5*Hierarchical Regression Analysis for Emotional Eating Behavior in the Heterosexual Subsample (n = 1,037)*

Variable	B	95% CI		SE B	β	R ²	ΔR^2
		LL	UL				
Step 1						.16	
Gender	-.499***	-.624	-.374	.064	-.219***		
Age	-.005**	-.010	.000	.002	-.057**		
BMI ¹	.059***	.046	.072	.007	.249***		
Education Level	.168**	.056	.281	.057	.081**		
RDR ²	.108	-.035	.251	.073	.039		
Medication	-.014	-.118	.090	.053	-.007		
Physical Activity	.073	-.027	.172	.051	.038		
Step 2						.31	.14
Body Appreciation	-.269***	-.336	-.188	.038	-.214***		
Impulse	.254***	.165	.343	.045	.206***		
Strategies	.025	-.057	.107	.042	.023		
Unfair Treatment	.004	-.098	.105	.052	.003		
Personal Rejection	.100**	.005	.196	.048	.081**		

Note. N = 1,037. Gender: 0 = Female; 1 = Male; ¹ BMI = Body Mass Index; Education Level: 0 = less than 12th grade; 1 = Higher education; ² RDR = Restrictive Diet Regimen: 0 = no regimen; 1 = vegan, paleo diet, ketogenic diet, others; Medication intake: 0 = no; 1 = yes; Physical Activity: 0 = no practice; 1 = practice. *p < .05; **p < .01; ***p < .001.

The model predicting restrained eating behavior explained 22% of the variance (Table 6). Control variables entered in Step 1 (being female, being older, having a higher BMI, having a RDR, and practicing physical activity) were significant predictors of restrained eating behavior, explaining 18% of the variance. As for variables entered in Step 2, having a less positive body image was the only significant psychological predictor of restrained eating behavior, further explaining 4% of the variance.

Table 6*Hierarchical Regression Analysis for Restrained Eating Behavior in the Heterosexual Subsample (n=1,037)*

Variable	B	95% CI		SE B	β	R ²	ΔR^2
		LL	UL				
Step 1						.18	
Gender	-.257***	-.332	-.142	.059	-.130***		
Age	.006**	.002	.011	.002	.085**		
BMI ¹	.053***	.041	.065	.006	.259***		
Education Level	.067	-.037	.170	.053	.037		
RDR ²	.179**	.047	.310	.067	.074**		
Medication	.085	-.011	.180	.049	.051		
Physical Activity	.359***	.268	.450	.046	.217***		
Step 2						.22	.04
Body Appreciation	-.224***	-.292	-.156	.035	-.212***		
Impulse	.041	-.041	.123	.042	.039		
Strategies	-.048	-.123	.028	.038	-.052		
Unfair Treatment	.018	-.075	.111	.047	.016		
Personal Rejection	.055	-.033	.142	.045	.051		

Note. *N* = 1,037. Gender: 0 = *Female*; 1 = *Male*; ¹ BMI = Body Mass Index; Education Level: 0 = *less than 12th grade*; 1 = *Higher education*; ² RDR = Restrictive Diet Regimen: 0 = *no regimen*; 1 = *vegan, paleo diet, ketogenic diet, others*; Medication intake: 0 = *no*; 1 = *yes*; Physical Activity: 0 = *no practice*; 1 = *practice*. **p* < .05; ***p* < .01; ****p* < .001.

Regarding the LGB+ subsample, the model predicting emotional eating behavior explained 35% of the variance (Table 7). Control variables entered in Step 1 explained 18% of the variance: having a higher BMI and having a higher education level predicted emotional eating behavior. Psychological variables entered in Step 2 explained further 16% of the variance: having a less body appreciation and resorting to more maladaptive strategies in emotion regulation significantly predicted emotional eating behavior. Minority stress variables entered in Step 3 further explained 1% of the variance.

Table 7*Hierarchical Regression Analysis for Emotional Eating Behavior in the LGB+ subsample (n=255)*

Variable	B	95% CI		SE B	β	R ²	ΔR^2
		LL	UL				
Step 1						.18	
Gender	-.099	-.323	.126	.114	-.053		
Age	-.002	-.013	.009	.005	-.024		
BMI ¹	.061***	.038	.084	.012	.325***		
Education Level	.207*	-.003	.417	.107	.115*		
RDR ²	.049	-.184	.281	.118	.023		
Medication	-.011	-.205	.183	.099	-.006		
Physical Activity	.075	-.129	.278	.103	.041		
Step 2						.34	.16
Body Appreciation	-.216***	-.360	-.072	.073	-.215***		
Impulse	.084	-.076	.244	.081	.083		
Strategies	.176***	.019	.333	.080	.208***		
Unfair Treatment	-.169	-.341	-.003	.087	-.159		
Personal Rejection	.114	-.049	.277	.083	.118		
Step 3						.35	.01
Out to World	-.023	-.066	-.77	.032	-.047		
Community Connectedness	.041	-.093	.154	.057	.041		
Community Pressure	.018	-.049	.093	.038	.029		

Note. N = 255. Gender: 0 = Female; 1 = Male; ¹ BMI = Body Mass Index; Education Level: 0 = less than 12th grade; 1 = Higher education; ² RDR = Restrictive Diet Regimen: 0 = no regimen; 1 = vegan, paleo diet, ketogenic diet, others; Medication intake: 0 = no; 1 = yes; Physical Activity: 0 = no practice; 1 = practice. *p < .05; **p < .01; ***p < .001.

The model predicting restrained eating behavior explained 34% of the variance (Table 8). Control variables entered in Step 1 (being older, having a higher BMI, having a higher education level, practicing physical activity) were significant predictors of restrained eating behavior, explained 16% of the variance. As for variables entered in Step 2, having a less body appreciation, and being more impulsive were significant psychological predictors of restrained eating behavior, further explaining 16% of the variance. Minority stress variables entered in Step 3 further explained 2% of the variance: feeling less connected to the LGB+ community was the only significant predictor of restrained eating behavior.

Table 8*Hierarchical Regression Analysis for Restrained Eating Behavior in the LGB+ subsample (n=255)*

Variable	B	95% CI		SE B	β	R ²	ΔR^2
		LL	UL				
Step 1						.16	
Gender	-.065	-.294	.164	.116	-.035		
Age	.012**	.002	.023	.006	.151**		
BMI ¹	.038***	.015	.061	.012	.198***		
Education Level	.193***	-.021	.407	.109	.106***		
RDR ²	.437	.201	.674	.120	.202		
Medication	.085	-.113	.283	.100	.046		
Physical Activity	.269**	.062	.476	.105	.144**		
Step 2						.32	.16
Body Appreciation	-.303***	-.450	-.156	.074	-.296***		
Impulse	.193**	.030	.356	.083	.188**		
Strategies	-.050	-.209	.110	.081	-.058		
Unfair Treatment	.001	-.175	.176	.089	.001		
Personal Rejection	.078	-.087	.244	.084	.080		
Step 3						.34	.02
Out to world	-.040	-.103	.009	.028	-.098		
Community Connectedness	-.130*	-.231	.003	.059	-.124*		
Community Pressure	-.007	-.082	.069	.039	-.011		

Note. N = 255. Gender: 0 = Female; 1 = Male; ¹ BMI = Body Mass Index; Education Level: 0 = less than 12th grade; 1 = Higher education; ² RDR = Restrictive Diet Regimen: 0 = no regimen; 1 = vegan, paleo diet, ketogenic diet, others; Medication intake: 0 = no; 1 = yes; Physical Activity: 0 = no practice; 1 = practice. *p < .05; **p < .01; ***p < .001

In brief, sociodemographic predictors of emotional eating behavior included BMI and education level (in both subsamples), gender and age (for heterosexual participants). In the case of restrained eating behavior, sociodemographic and health condition predictors included age, BMI, and practicing physical activity (in both samples), having a RDR (for heterosexual participants), and education level (for LGB+ participants). After controlling for sociodemographic characteristics and health conditions, psychological predictors of emotional eating behavior included body appreciation (in both sexual identity groups), impulsive behavior (for heterosexual) and strategies of emotion regulation (for LGB+ participants); as for everyday discrimination predictors, personal rejection was the only significant predictor (for heterosexual participants). Regarding restrained eating behavior, psychological predictors

comprised body appreciation (in both sexual identity groups) and impulsive behavior (for LGB+); everyday discrimination variables were not predictors of restrained eating behavior. This pattern of results provides partial support to hypothesis 2. Finally, regression results partially support hypothesis 3, as only one minority stress variable (community connectedness) predicted restrained eating behavior.

3. Discussion

This study sought to explore the role of psychological, everyday discrimination, and minority stress variables in the eating behavior of heterosexual and sexual minority individuals. Results show that LGB+ individuals reported higher levels of emotional eating behaviors compared to their heterosexual peers. Additionally, we found specific sociodemographic and psychosocial characteristics that were positively and negatively associated with dysfunctional eating behaviors. Among the first, BMI, gender, education level, and physical activity were the most significant predictors. Among the second, body appreciation and emotion regulation revealed the greatest predictive power. Finally, among the minority stress variables, only community connectedness was a significant predictor.

In partial accordance with our expectations and consistent with prior results, LGB+ participants scored significantly higher in emotional eating behavior (Calzo et al., 2017; Laska et al., 2015; Shearer et al., 2015; Watson et al., 2017; Yean et al., 2013). Sexual identity was not associated with restrained eating behavior and this unexpected result merits further investigation. However, it is worth noting that the magnitude of found differences was very low, which points to similar eating behaviour patterns in both samples. A certain homogeneity of the two samples (e.g., highly educated individuals, mostly women, etc.) might account for these results.

Regarding **emotional eating behavior**, the impact of various sociodemographic characteristics is noticeable. Firstly, as expected BMI was the most important predictor in both subsamples. Prior research suggested that a higher BMI is indeed a risk factor for dysfunctional eating (Koenders & van Strien, 2011; Mason & Lewis, 2014). Interestingly, gender was a significant predictor only among heterosexual people. This result is in line with the study of Elgin and Pritchard (2006) which found that women scored higher on measures of dysfunctional eating and body dissatisfaction compared to men. Also, Cella and colleagues (2013) find a positive relationship between femininity and dysfunctional eating and a negative one between masculinity and dysfunctional eating behaviors.

In fact, women are more exposed than men to cultural messages about ideal physical appearance. Through the repeated experience of objectification, women are gradually socialized to internalize an observer's perspective of their own bodies (Tiggemann, 2013) and may use eating as a coping strategy to alleviate these negative

emotional states (Braet et al., 2014; Elgin and Pritchard 2006). However, heterosexual women may be more vulnerable to this socialization process as they are pressured to be attractive to heterosexual men (Siever, 1994). In fact, Siever (1994) showed that one's own appearance seems to be less important for lesbian women than for their heterosexual counterparts. Media image's influence may lead heterosexual women, in particular, to internalize patterns of physical beauty, resulting in dissatisfaction with their bodies when they cannot match up to these patterns (Uchôa et al., 2019).

Although age (being younger) was a significant predictor of emotional eating behavior only for the heterosexual subsample, having a higher education level was significant predictor of emotional eating behavior in both subsamples. The university context does not seem to be a protective one for our participants. This result suggests that young adults may be going through a difficult phase even when they attend higher education. They may feel more pressure and stress in their daily lives, perhaps related to the academic integration and/or competitiveness inherent to this context. Their focus and study goals may lead them to forget overrun some meals or chose fast food, putting them vulnerable to developing dysfunctional eating behaviors (Choi, 2020).

Regarding psychological variables, as expected, body appreciation was an important predictor of eating behavior independently of sexual identity. These findings are similar to prior work, which revealed that higher levels of body appreciation have also been associated with lower levels of dysfunctional eating behaviors (Gillen, 2015; Tylka & Wood-Barcalow, 2015b). These results occurred independently of BMI. That is, how individuals feel about their bodies seems to matter more than their objective size. This is important, as body appreciation might be protective against mental health concerns and dysfunctional eating, which are elevated in LGB+. To date, the most empirically supported body image interventions are neutral regarding sexual identity. However, Burnette and colleagues (2019) study conclusions suggest that LBQ women might benefit from interventions that consider sexual identity and proposes relevant factors for this group, such as social support, resilience, and self-esteem.

As predicted, emotion regulation played an essential role in predicting eating behavior regardless of sexual identity. Some studies have indeed provided evidence that individuals who experience emotion regulation difficulties may be prone to periods of intense emotional distress, which in turn increases the risk of engaging in dysfunctional eating behaviors (Buckholdt et al., 2010; Sim & Zerman, 2006). In our study, different aspects of emotion regulation seem to be involved according to the eating behavior and

the sexual identity in question. Being impulsive was a significant predictor of emotional eating behavior in heterosexual subsample, and the use of maladaptive emotion regulation strategies was a predictor in the LGB+ subsample. In fact, research has shown that among LGB+ people, early exposure to socially rejecting environments may contribute to greater difficulties regulating one's emotions when coping with distress (Pachankis et al., 2015). When faced with moments of negative emotion, heterosexual people appear to be unable to control impulsive behaviors and act in accordance with the desired goals. On the other hand, LGB+ people cannot use emotional regulation appropriately by implementing strategies that modulate emotional responses in a flexible way to achieve the desired goals. Regardless of the emotional strategy, both sexual identity groups use food to cope with negative emotional states. Emotional eating behavior may provide an escape from negative feelings by allowing the individual to temporarily self-soothe.

In partial accordance with our expectations, personal rejection was a significant predictor of dysfunctional of only one type of eating behavior and only among the heterosexual subsample. Thus, the greater the feelings of personal rejection the more pronounced the emotional eating behavior was among heterosexual participants. Yoon and colleagues (2022) found that experiences of moderate and high levels of discrimination were associated with a greater prevalence of dysfunctional eating, compared to no experience of discrimination, after accounting for BMI, which further suggests that everyday discrimination is associated with dysfunctional eating.

Everyday discrimination was not associated with emotional and restrained eating behaviors in LGB+ population. A certain homogeneity of our LGB+ sample should be considered (e.g., highly educated individuals belonging to LGB+ associations). They may be individuals who respond to questionnaires frequently and may be better integrated into their community. However, the average levels of everyday discrimination experienced by the LGB+ population are higher compared to their heterosexual peers, and this finding merits further investigation.

Although minority stress variables are important contributors to explaining dysfunctional eating behaviors, in our study, there was not a significant association between minority stress variables and emotional eating behavior, after controlling for sociodemographic and psychological variables. Minority stress variables may not wholly explain dysfunctional eating risk in the LGB+ population (Convertino et al., 2021). In fact, researchers have identified several risk factors for dysfunctional eating behaviors among LGB+ people besides minority stress variables, including general negative affect

(Stice, 2002), depression or hopelessness (Hudson et al., 2007), anxiety (Feldman & Meyer, 2010), stress (Ball & Lee, 2000; Cooley & Toray, 2001), body image disturbance including thin-ideal body image (Weiderman & Pryor, 2000), and increased importance of being attractive (Parker & Harriger, 2020).

Regarding **restrained eating behavior**, as expected, BMI was the most significant sociodemographic predictor in both subsamples (Koenders & van Strien, 2011; Snoek et al., 2008). Being older was also a significant predictor of restrained eating behavior in both subsamples. Research shows that older individuals seem to use weight control and body dissatisfaction as greater motivation for exercise (Moore & Keel, 2003). In older age, perhaps the focus of attention will shift from solely and more negatively appearance to body appreciation, respect and gratitude for the body. The focus is not centred on the assessment and validation of others, due to sociocultural pressure for a certain beauty ideal. On the contrary, the focus is centred on self-care and weight maintenance as a concern for health and respect. Older people seem to use restrained behavior as a form a strategy rather than dysfunctional eating behavior. Tiggemann and McCourt (2013) shown that greater age among women was associated with greter body appreciation. Older individuals become more appreciative of their health and able to accept their body's imperfections. Also, practice physical activity was a significant predictor of restrained eating behavior in both subsamples. Older participants may have a bodily goal to fulfil and seek rational ways to achieve that goal, including greater discipline, self-control, and weight loss strategies such as physical activity and a restrictive diet regimen. These results emphasize the need of further investigation the role of age in the eating behaviors.

As hypothesized, body appreciation was a significant predictor of restrained eating behavior. This finding is similar to emotional eating behavior (Gillen, 2015; Tylka & Wood-Barcalow, 2015b). Conversely, emotion regulation seems to play a different role depending on the eating behavior and sexual identity. In restrained eating behavior, being impulsive is a significant predictor of LGB+ individuals. Research shows that the same emotion can increase food intake in one group of persons but decrease food intake in another (Macht, 2008).

Partially consistent with our third hypothesis, only community connectedness was a significant predictor of all the minority stress variables inserted in Step 3. In one hand, becoming connected and involved in the LGB+ community may provide spaces to avoid heterosexism, discrimination, and stigmatization from others, which hypothesizes that

community connectedness protects against adverse mental health effects by promoting group-level coping (Meyer, 2003). In other hand, community involvement was associated with greater dysfunctional eating behaviors and increased disordered body image behaviors (Convertino et al., 2021). In our study, maybe LGB+ individuals who feel less connected with their own community, value thinness and athletic bodies fewer and therefore are lesser accepted by their peers. This conclusion was further supports by the idea that BMI is negatively correlated with community connectedness ($r = -.088$). Social demands to have a thinness body are linked to serious mental and physical health problems. It is worth further explore the role of community connectedness in separately large groups of sexual minority individuals.

Although the results of the current study produced valuable new information about our understanding of the factors that contribute to dysfunctional eating behavior among heterosexual and LGB+ subsamples, several limitations must be considered in interpreting the findings. First, the sample was collected through an online questionnaire. On one hand, this may have allowed for increased participation (due to the Covid-19 pandemic); on the other hand, this may have prevented the participation of those who did not have access to the Internet. Second, this was a correlational study and inferences of causality are not possible. Additional limitations include the relatively small sample size of sexual minority adults. Although this did not preclude our ability to detect significant effects, the sample size potentially restricts the generalizability of our findings. Further research should explore effects separately in large groups of LGB+ individuals to allow for more complex and robust analysis. Finally, community pressure to have an ideal body was measured through a single item and future works should include a more thorough and multi-item assessment of this aspect.

Some implications for practice can be drawn considering our results. Assessment and identification of dysfunctional eating behaviors can help preventing clinical manifestations of eating disorders, and this should be done both among heterosexual and LGB+ individuals. Also, given that positive body image has significant health implications, clinicians must assess individuals' feelings about their bodies. Information about positive body image can help people focus on what they like and appreciate about their bodies and how to take care of them rather than focusing on how to stop disliking their bodies. Considering the prevalence of maladaptive emotion regulation in individuals with dysfunctional eating behaviors, it is essential that research and treatment continues to identify which specific facets of emotion regulation account for dysfunctional eating

behaviors. Our study also shows that young adults who attend higher education may be going through a critical phase, and psychologists have an essential role in this phase (e.g., academic integration; the competitiveness inherent to this context; distance from the family, etc.). There is a need for follow-up that continues after adolescence. Higher education institutions have not always assumed responsibility for their students' integration processes. Currently, in a context of democratization in higher education, with access by students with very diverse social, economic, cultural, regional, and national origins, institutions tend to pay more attention to these processes and to the ways of living in higher education, assuming concerns about the integration and well-being of students, through peer mentoring programs, for example (Torres et al., 2020)

Finally, an exploration of LGB+ population has shown that becoming connected and involved in the LGB+ community may provide spaces to avoid heterosexism, discrimination, and stigmatization from others (Meyer, 2003), stressing the need to implement group-level coping. Overall, this study allows an important understanding of some critical variables for the improvement, prevention, and treatment of dysfunctional eating behavior in an inclusive way.

4. Conclusion

This study offers preliminary evidence that positive body image and emotion regulation have a substantial impact on eating behaviors, independently of one's sexual identity. Also, for LGB+ participants, community involvement may be an important protective mechanism for dysfunctional eating behavior.

Our study is pioneering in this area and our findings contribute to a more complex understanding for clinicians and other healthcare professionals, contributing to deepen their knowledge about of the disparities between LGB+ and heterosexual adults eating behaviors and associated critical variables, highlighting the necessity to alleviate these disparities. We hope this will stimulate further research. It is essential that research and intervention in this area continues to investigate positive body image and also identify which specific facets of emotion regulation account for dysfunctional eating behaviors, preventing clinical manifestations. Positive body image and emotion regulation are intimately connected to individual and societal well-being. Research in this are has the real potential to improve lives.

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Appendix 1

Table A

Cronbach's alpha values for the total sample and to each of the study groups (sexual identity).

	Heterosexual (<i>n</i> =1037)	LGB+ (<i>n</i> =255)
Emotional Eating Behavior	.910	.930
Restrained Eating Behavior	.956	.942
Body Appreciation	.945	.953
Impulse	.867	.878
Strategies	.706	.716
Unfair Treatment	.768	.808
Personal Rejection	.773	.788
LGBIS ¹	–	.896
Out to Family	–	.818
Out to World	–	.802
Community Connectedness	–	.913

Note. ¹LGBIS = Lesbian, Gay and Bisexual Identity Scale;

Appendix 2

Table B

Bivariate Pearson Correlations Between Eating Behaviors, Psychological and Minority Stress Variables.

	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12
(1) EEB ¹	255	2.66	0.89	1											
	1037	(2.42)	(0.95)												
(2) REB ²	255	2.41	0.85	-.446**	1										
	1037	(2.29)	0.83	(.368**)											
(3) Body Appreciation	255	3.38	0.88	-.464**	-.392**	1									
	1037	(3.67)	(.78)	(-.394**)	(-.264**)										
(4) Impulse	255	2.21	0.89	.343**	.279**	-.441**	1								
	1037	(1.88)	(0.78)	(.353**)	(.100**)	(-.328**)									
(5) Strategies	255	2.63	1.06	.404**	.228**	-.601**	.746**	1							
	1037	(2.08)	(0.91)	(.304)	(.066)	(-.446**)	(.696**)								
(6) Unfair Treatment	255	1.09	0.84	.174*	.185**	-.249**	.316**	.340**	1						
	1037	(0.79)	(0.71)	(.171*)	(.076*)	(-.214**)	(.286**)	(.274**)							
(7) Personal Rejection	255	1.33	0.93	.218**	.212**	-.330**	.401**	.428**	.746**	1					
	1037	(0.94)	(0.77)	(.222**)	(.093**)	(-.276**)	(.317**)	(.359**)	(.727**)						
(8) LGBI ³	255	2.83	1.03	.071	.111	-.225**	.143*	.129*	.167**	.187**	1				
(9) Family	255	4.04	2.03	-.043	-.015	.038	-.140*	-.129*	.052	-.005	.061	1			
(10) World	255	4.23	1.85	.644**	-.041	-.073	.075	-.076	.080	-.009	-.018	.644**	1		
(11) CC ⁴	255	3.56	0.87	-.058	-.190**	.157*	-.040	-.048	.042	-.076	-.291**	.163**	.211**	1	
(12) CPIB ⁵	255	2.66	1.42	.172**	.174**	-.221**	.111	.131*	.142**	.101	.216**	.216**	.079	-.037	1

*Note. Note. N=255 vs (N=1037). ¹EEB = Emotional Eating Behavior; ²REB = Restrained Eating Behavior; LGBI = Lesbian, Gay, Bisexual Identity Scale; ⁴CC = Community Connectedness; ⁵CPIB = Community pressure to have an ideal body. * $p < .05$; ** $p < .01$; *** $p < .001$.*

Appendix 3

Table C

Bivariate Pearson Correlations Between Eating Behaviors and Sociodemographic Variables.

	n	M	SD	1	2	3	4	5	6	7	8	9
1. EEB ¹	255	2.66	0.89									
	1037	(2.42)	(0.96)	1								
2. REB ²	255	2.41	0.91	.446**								
	1037	(2.29)	(0.83)	(.368**)	1							
3. Gender	255	0.36	0.48	.000	.037							
	1037	(0.23)	(0.42)	(-.172*)	(.174**)	1						
4. Age	255	28.18	11.00	-.044	.146*	.341**						
	1037	(29.87)	(11.27)	(-.052)	(.149**)	(.125**)	1					
5. BMI ³	255	24.33	4.75	.396**	.312**	.172**	.243**					
	1037	(23.59)	(4.20)	(.303**)	(.314**)	(-.066*)	(.279**)	1				
6. Education Level	255	0.56	0.50	-.008	.074	.149*	.369**	.058				
	1037	(0.67)	(0.47)	(.036)	(.072**)	(-.321**)	(.302**)	(-.004)	1			
7. RDR ⁴	255	0.23	0.42	-.023	.152*	-.154*	-.066	-.158*	-.109			
	1037	(0.16)	(0.36)	(.050)	(.124**)	(-.008)	(.018)	(-.017)	(-.003)	1		
8. Medication	255	0.59	0.49	.026	.083	-.058	-.063	-.018	.340	-.007		
	1037	(0.54)	(0.50)	(.095**)	(.128**)	(.277**)	(.142**)	(.039)	(.111**)	(.083**)	1	
9. Physical Activity	255	0.38	0.49	-.052	.143*	.112	.218**	-.043	.173**	.110	.131*	1
	1037	(0.48)	(0.50)	(-.052)	(.155**)	(-.037)	(.000)	(-.063)	(-.028)	(.077*)	(.019)	

Note. N=255 vs N=1037. ¹EEB = Emotional Eating Behavior; ²REB = Restrained Eating Behavior; Gender: 0 = *Female*; 1 = *Male*; Education Level: 0 = *less than 12th grade*; 1 = *Higher education*; ³BMI = Body Mass Index; ⁴RDR (Restrictive Diet Regimen): 0 = *no regimen*; 1 = *vegan, paleo diet, ketogenic diet, other*; Medication intake: 0 = *no*; 1 = *yes*; Physical Activity: 0 = *no practice*; 1 = *practice*. * $p < .05$; ** $p < .01$; *** $p < .001$.