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#### **Articles**

# Body Image, Depression, and Self-Perceived Pornography Addiction in Italian Gay and Bisexual Men: The Mediating Role of Relationship Satisfaction

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#### **Abstract**

The international literature has shown that self-perceived problematic pornography use is often related to lower levels of relationship satisfaction, as well as to higher levels of negative body image and depression. In this study, 158 Italian gay (65.8%) and bisexual (34.2%) men reported on their body image, Internet pornography use, and indicators of their individual and relational well-being. We hypothesized that individuals who report higher levels of relationship dissatisfaction, negative body image, and with higher self-perceived problematic pornography use would also present higher levels of depression. As predicted, relationship satisfaction was inversely related to male body image, self-perceived problematic pornography use, and depression. We also hypothesized the direct and indirect effects of depression on self-perceived problematic pornography use, through the mediating variable of relationship satisfaction. As predicted, depression, via relationship satisfaction, was related to self-perceived problematic pornography use. Implications for future research and policies are discussed.

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# **Keywords:**

Self-perceived problematic pornography use; Male body image; Depression; Relationship satisfaction; Gay/bisexual men.



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# 1. Introduction

In recent years, access to pornography has exponentially increased due to the Internet-based accessibility of different types of information (e.g., D'Arienzo et al., 2019). Subsequently, research interest concerning the effects of pornography on individuals (e.g., de Alarcón, et al., 2019; Tylka, 2015) and couples (e.g., Hesse & Floyd, 2019; Minarcik et al., 2016) has increased, with a special focus on heterosexual pornography consumption.

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The high degree of Internet pornography consumption seemes to be linked to psychopathological behaviors, such as self-perceived problematic pornography use (SPPPU) (e.g., Griffiths, 2012; Sniewski et al., 2018). It can be defined as a self-identification addiction to pornography by individuals with dysfunctional online behaviors, characterized by uncontrolled, compulsive, and excessive use of pornographic online content (e.g., Cacioppo et al., 2018; Cooper et al., 2000; Gioia & Boursier, 2019). Self-perceived Internet problematic pornography use is generally associated with psychological distress (e.g., Noor et al., 2014; Philaretou et al., 2005; Rosser et al., 2014), as well as with relational difficulties (e.g., Bekaroo et al., 2017; Bergner & Bridges, 2002). The models that have been proposed in order to understand this form of behavior include: the availability of pornographic materials, their affordability, the anonymity of the user, and the compulsive nature of the problematic behavior and attendant failure to break free from it, despite several negative consequences and expectations (e.g., Bensimon, 2007; Boursier & Manna, 2018; Cooper et al., 2000). However, it is necessary to highlight that among the behavioral addictions so far in the reference nosography (American Psychiatric Association, 2013), only gambling appears (Frisone et al., 2020); so SPPPU falls outside the framework of behavioral addiction.

Only in more recent times gay male pornography has assumed greater and increasing relevance in research fields (e.g., Bishop, 2015; Corneau et al., 2017; Morrison, 2004). Gay male pornography appears ubiquitous in gay male culture (e.g., Morrison et al., 2007), playing a fundamental role in cultural and sexual validation, as well as in the identity development of gay and bisexual men (e.g., Hald et al., 2013, 2015; Kubicek et al., 2011; Mustanski et al., 2011; Rothmann, 2013). However, only a few studies have investigated the possible negative effects of pornography consumption on gay and bisexual men, and they have done so by especially focusing on effects on high-risk sexual behaviors (e.g., Nelson et al., 2016; Rosser et al., 2013; Træen et al., 2015).

Recently, some studies have focused their interest on the impact of gay male pornography consumption on sexual minority men's body image and dissatisfaction (e.g., DeBleare & Brewster, 2017; Gleason & Sprankle, 2019; Kvalem et al., 2016; Tylka, 2015). Indeed, several studies have highlighted that sexual minority men, more so than heterosexual males, may experience greater body image dissatisfaction and appearance-related concerns, due to the idealized body images often promoted by gay male pornography (e.g., Calzo et al., 2013; Duggan & McCreary, 2004; Levesque & Vichesky, 2006; Morrison et al., 2007; Peplau et al., 2009; Settineri et al., 2018; Tiggemann et al., 2007). Furthermore, research has demonstrated the relationship between sexual minority men's body image dissatisfaction (especially in terms of muscularity and leanness) and psychological distress (e.g., Brennan et al., 2012; DeBleare &

Brewster, 2017; Smith et al., 2011). Scholars found correlations between viewing mesomorphic male pornographic images, body dissatisfaction, and depressed affect in heterosexual men (e.g., Johnson et al., 2007; Philaretou et al., 2005; Tylka, 2015). Similarly, Whitfield et al. (2018) replicated and confirmed these findings in a sexual minority men's sample. Specifically, they found an indirect effect, via negative body image, of gay male pornography consumption on both anxiety and depression symptoms, thus confirming previous research findings (e.g., Blashill, 2010; Duggan & McCreary, 2004).

Finally, research on heterosexual individuals and couples has shown a negative correlation between problematic pornography use and relationship satisfaction, investment, and commitment (e.g., Bekaroo et al., 2017; Böthe et al., 2017; Daspe et al., 2018; Hesse & Floyd, 2019; Minarcik et al., 2016). To our knowledge, no similar studies have been conducted on sexual minorities' samples, perhaps due to the diffusion and acceptance of pornography use among gay and bisexual men, as well as to the diffusion of non-monogamous agreements that often characterize gay and bisexual relationships (e.g., LaSala, 2005; Parsons et al., 2013; Stults, 2019).

Overall, these research findings seem to indicate that the relational context could play an important role in SPPPU and its links with body image and depression, thus indicating the need for further investigation.

# 1.1 Aims of the Study and Hypotheses

Based on the aforementioned literature, this study has several aims. Firstly, we aim to verify the association between relationship satisfaction, body image, depression, and SPPPU in Italian gay/bisexual men, by taking into account the large influence of the Catholic Church in the Italian context. Indeed, as emerged by previous studies (e.g., Lingiardi et al., 2015; Pistella et al., 2016; Sommantico et al., 2020), the conservative Catholic vision of homosexuality and bisexuality as "intrinsically disordered" not only favors a discriminatory attitude toward sexual minorities, but also induces in them the internalization of the social stigma. Furthermore, international research findings (e.g., Baltazar et al., 2010; Hardy et al., 2013; Perry, 2017; Short et al., 2015) have highlighted a negative association between religiosity and pornography consumption, via internalization of moral values and norms.

Specifically, we hypothesize: (a) that relationship satisfaction is negatively related to body image, depression, and SPPPU (Hypothesis 1) and (b) that body image, depression, and SPPPU are positively correlated (Hypothesis 2).

Secondly, we aim to explore the possible associations between relationship satisfaction, body image, depression, and SPPPU, hypothesizing that lower levels of relationship satisfaction and higher levels of negative body image and depression predict higher SPPPU (Hypothesis 3).

Furthermore, we are interested in examining the possible indirect effects of depression, via relationship satisfaction, on SPPPU, hypothesizing the mediating effect of relationship satisfaction (Hypothesis 4).

Finally, we are interested in evaluating the role of socio-demographic variables [e.g., age, sexual orientation (gay/bisexual), relationship status, relationship length, kind of relationship (closed/open), and religious/Catholic beliefs].

#### 2. Method

#### 2.1 Recruitment and Online Data Collection Procedures

Participants were recruited online by advertisements placed on social media (LGBT Associations, LGBT list-servs, LGBT discussion boards, and LGBT research centers), according to the following criteria: (i) participants must identify as gay or bisexual men, (ii) they must be over the age of 18 years, and (iii) they must be in a stable relationship lasting at least 6 months. No remunerative rewards were given. This web-based sampling is one of the most-utilized sampling strategies in LGBT studies, particularly for its ability to reach hard-to-reach individuals (Binson et al., 2007; Rothblum, 2007). To improve this community-based sampling, we also used snowball sampling. In this vein, we first asked recruited participants to identify other potential respondents from their social network, who were also asked to nominate other individuals from their social network, and so forth (Meyer & Wilson, 2009).

Data were collected through self-report instruments using an Internet-based survey (Riggle et al., 2005). On the first page, participants were informed about the purpose, rationale, and procedures of the study, and they were asked to give informed consent to participate in the survey, which took approximately 25 minutes to complete. A basic demographic questionnaire was completed on the second page, collecting information regarding: age, relationship status (partnered/cohabiting/in a civil union), relationship length, kind of relationship (closed/open), religious/Catholic beliefs, and level of education. The following pages of the survey consisted of a presentation of different instruments, in the following order: Gay and Lesbian Relationship Satisfaction Scale (GLRSS; Belous & Wampler, 2016), Male Body Attitudes Scale-Revised (MBAS-R; Ryan et al., 2011), Beck Depression Inventory II (BDI-II; Beck et al., 1996), and Cyber Pornography Addiction Test (CYPAT; Cacioppo et al., 2018) (for a detailed description of the measures see the "Measures" section).

# 2.2 Participants

Using the described procedures, 225 gay (59.1%) and bisexual men (40.9%) decided to participate in the study. Of these, only 70% completed the survey with no missing data. The final sample consisted of 158 gay (65.8%) and bisexual men (34.2%), with a mean age of 36.1 years (SD = 11.6). Cohabiting participants were 38%, and 22.2% of the participants were currently in a civil union (average months of cohabitation = 86; SD = 90.4). Participants had been in a stable union for an average of 91.6 months (SD = 91.8). Participants in an open relationship were 15.2%. Participants with religious/Catholic beliefs were 31.6%. The sample had a high level of education, with 34.2% of the participants having completed secondary school and 57.6% having completed a university or post-university degree.

#### 2.3 Measures

In a basic demographic questionnaire, participants were asked about age, sexual orientation (gay/bisexual), relationship status, relationship length, kind of relationship (closed/open), religious/Catholic beliefs, and level of education.

The Italian version of the *Gay and Lesbian Relationship Satisfaction Scale* (GLRSS; Sommantico et al., 2019) is an 18-item self-report questionnaire measuring relationship satisfaction on 2 subscales: (a) Relationship Satisfaction (RS 11 items; e.g., "When there is a difference of opinion, we try to talk it out rather than fight"); (b) Social Support (SS 7 items; e.g., "My family accepts my relationship with my partner"). Items 1, 2, 6, 7, and 11 are 'reverse keyed'. The questionnaire is completed by expressing agreement according to a 6-point Likert type scale, ranging from "*Strongly disagree*" to "*Strongly agree*". Authors reported good scale score reliability. In the present study, Cronbach's a (95% CI) were: RS = .82; SS = .80; GLRSS = .81.

The *Male Body Attitudes Scale-Revised* (MBAS-R; Ryan et al., 2011) is a 15-item self-report instrument assessing men's body dissatisfaction on 3 subscales: (a) Muscularity (MUS 7 items; e.g., "I think my arms should be more muscular"); (b) Body Fat (BF 5 items; e.g., "I think I have too much fat on my body"); (c) Height (HT 3 items; e.g., "I wish I were taller"). Items 7 and 14 are 'reverse keyed'. Participants were asked to respond according to a 5-point Likert type scale ranging from 1 ("*Never*") to 5 ("*Always*"). The MBAS-R was specifically translated into the Italian language, following the guidelines for translating research measures (Brislin, 1970). The authors reported good scale score reliability. In the present study, Cronbach's *a* (95% CI) were: MUS = .90; BF = .91; HT = .89; MBAS = .90.

The Italian version of the *Beck Depression Inventory II* (BDI-II; Ghisi et al., 2006) is a 21-item self-report instrument assessing symptoms of depression. Each item (e.g., "Sadness"; "Loss of

Pleasure"; "Self-incrimination"; "Irritability") is rated on a Likert type scale ranging from 0 to 3, according to the severity of the experienced difficulties. The total score ranges from 0 to 63 and is categorized in four levels: absence of depressive content (total score, 0-13); mild depression (total score, 14-19); moderate depression (total score, 20-28); and severe depression (total score,  $\geq$  29). The authors reported good scale score reliability. In the present study, Cronbach's a (95% CI) was .92.

The Cyber Pornography Addiction Test (CYPAT; Cacioppo et al., 2018) is an 11-item self-report instrument assessing perceived addiction to Internet pornography. Each item (e.g., "I told myself to stop using online pornography, but I didn't succeed"; "I get sexually aroused only when I watch online pornography") is rated on a 5-point Likert type scale ranging from 1 ("Never") to 5 ("Always"). The authors reported excellent scale score reliability. In the present study, Cronbach's a (95% CI) was .94.

# 2.4 Data Analyses

Survey data were entered into a SPSS 23.0 (IBM Corp., 2015) database and their accuracy was verified by project staff. Cronbach's a (> .70; Nunnally & Bernstein, 1995) was computed for reliability analyses. Correlations analyses were conducted by means of Pearson's coefficient (r; between .10 and .29 = small association; between .30 and .49 = medium association; and > .50 = large association; p-value < .05). Group differences were verified through ANOVA (p-value < .05). Effect sizes were measured through Eta-square ( $\eta^2$ ; small  $\geq$  .01; medium  $\geq$  .059; large  $\geq$  .138; Cohen, 1998). Multiple regression analyses were conducted, using standardized  $\beta$  coefficients and  $R^2$  coefficients (p < .05), to determine the contribution of each predictive variable to the regression model. For mediation analyses, both direct and indirect effects were examined, using bootstrapping methods, in order to estimate bias-corrected asymmetric confidence intervals (CIs). This was done with 5000 resamples and replacement, through Model 4 of the PROCESS macro tool for SPSS (Hayes, 2018). A CI not inclusive of zero indicates significant effect (Hayes & Rockwood, 2017).

#### 2.5 Ethical Standards

The study complied with the American Psychological Association (APA) ethical standards in the treatment of human research participants, and it also conformed to the provisions of the 1964 Helsinki Declaration and its later amendments. Furthermore, the study was approved by the Ethical Committee of Psychological Research of the Department of Humanities of the University of Naples Federico II (protocol no. 32/2019).

#### 3. Results

# 3.1 Descriptive Statistics, Correlations, and Groups' Differences

Means, standard deviations, and Cronbach's a are presented in **Table 1**.

Table 1. Descriptive statistics for the GLRSS, the MBAS-R, the BDI-II, and the CYPAT

	Gay Me (N = 10		Bisexual (N= 5		Total sar (N=1	-	
	M	$\boldsymbol{s}$	M		M		α
	(Range)	D	(Range)	SD	(Range)	SD	
RS	31.1	7.	29.5	7.1	30.6	7.4	.82
	(15-46)	6	(15-45)	/.1	(15-46)		.02
SS	24.3	7.	23.5	7.6	24.0	7.7	.80
	(0-36)	8	(7-36)	7.0	(0-36)		.00
GLRSS	55.4	12	53.0	12.5	54.6	12.8	.81
	(28-79)	.9	(30-77)	12.5	(28-79)		.01
MUS	15.7	8.	18.2	9.3	16.5	8.8	.90
	(7-35)	4	(7-35)	9.3	(7-35)		.90
BF	11.1	5.	12.7	6.6	11.7	6.2	.91
	(5-25)	9	(5-25)	0.0	(5-25)	0.2	.91
HT	6.4	3.	7.5	3.9	6.8	3.6	.89
	(3-15)	4	(3-15)	3.7	(3-15)	5.0	.07
MBAS-R	33.2	17	38.4	19.6	35.0	18.4	.90
	(15-75)	.6	(15-75)	17.0	(15-75)	10.4	.70
BDI-II	16.9	10	19.7	10.8	17.9	10.5	.92
	(0-61)	.3	(3-58)	10.0	(0-61)		.)_
CYPAT	24.2	13	28.0	14.2	25.5	13.8	.94
	(1-55)	.4	(4-54)	17.2	(1-55)	13.0	.74

*Note*: RS = Relationship Satisfaction; SS = Social Support; GLRSS = GLRSS total score; MUS = Muscularity; BF = Body Fat; HT = Height; MBAS-R = MBAS-R total score; BDI-II = BDI-II total score; CYPAT = CYPAT total score.

Participants completed the GLRSS, the MBAS-R, the BDI-II, and the CYPAT. Zero-order correlations are shown in Table 2.

Participants' age was only significantly positively correlated with relationship length (r = .56; p < .01). Relationship length was significantly positively correlated with relationship satisfaction (r = .25; p < .01), and significantly negatively correlated with the MBAS-R, BDI-II, and CYPAT (with r values ranging from -.26 to -.25; p < .01). Furthermore, the GLRSS was highly significantly negatively correlated with the MBAS-R, BDI-II, and CYPAT, with r values (p < .01) ranging from -.58 to -.73. Finally, the MBAS-R, BDI-II, and CYPAT were highly significantly positively correlated with r values (p < .01) ranging from .82 to .88. These results strongly support Hypotheses 1 and 2.

Table 2. Zero-Order Correlation between Participants' Age, Relationship Length, and the Instruments

(N = 158)

	1	2	3	4	5	6
1. PAge	-					
2. RelLen	.56*	-				
3. GLRSS	.10	.25*	-			
4. MBAS-R	11	25*	73*	-		
5. BDI-II	13	25*	58*	.82*	-	
6. CYPAT	15	26*	69*	.83*	.88*	-

*Note:* PAge = Participants' age; RelLen= Relationship Lenght.

In order to evaluate the role of socio-demographic variables [e.g., sexual orientation (gay/bisexual), relationship status, kind of relationship (closed/open), and religious/Catholic beliefs] a series of analyses of variance were conducted. ANOVA and Tukey tests indicated the medium significant effects of relationship status. Indeed, participants in civil unions showed higher scores than others on the GLRSS ( $F_{2, 157} = 8.946$ , p < .01,  $\eta^2 = .10$ ), while also showing lower scores than others on the MBAS-R ( $F_{2, 157} = 11.974$ , p < .01,  $\eta^2 = .13$ ), BDI-II ( $F_{2, 157} = 7.253$ , p < .01,  $\eta^2 = .09$ ), and CYPAT ( $F_{2, 157} = 10.556$ , p < .01,  $\eta^2 = .12$ ).

No significant differences regarding sexual orientation (gay/bisexual), relationship length, kind of relationship (closed/open), and religious/Catholic beliefs were found.

# 3.2 Regression Analysis

Based on previous results, a hierarchical multiple regression was run to determine if the addition of relationship satisfaction, body image, and, finally, depression improved the prediction of SPPPU, over and above age and relationship length (see Table 3 for full details on each regression model). The full model of age, relationship length, relationship satisfaction, body attitudes, and depression to predict SPPPU (Model 4) was statistically significant:  $R^2 = .857$ ,  $F_{(2, 155)} = 247.624$ , p < .001; adjusted  $R^2 = .852$ . The addition of relationship satisfaction as predictor of SPPPU (Model 2) led to a statistically significant increase in  $R^2$  of .413,  $F_{(1,154)} = 123.150$ , p < .001. The addition of body attitudes as predictors of SPPPU (Model 3) also led to a statistically significant increase in  $R^2$  of .372,  $F_{(1,153)} = 391.752$ , p < .001. Finally, the addition of depression to the prediction of SPPPU (Model 4) led to a statistically significant increase in  $R^2$  of .041,  $F_{(1,152)} = 247.623$ , p < .01.

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

**Table 3.** Multiple Hierarchical Regression Predicting CYPAT from Participants' Age, Relationship Length, GLRSS, MBAS-R, and BDI-II (N = 158)

	Model 1		Mode	Model 2 Model		el 3 Model 4		el 4
Variable	В	β	В	β	В	β	В	β
Constant	29.03**		67.09**		5.94		5.90	
PAge	.00	.00	04	03	04	03	04	03
RelLen	04*	27*	01	08	00	02	00	01
GLRSS			72**	67**	33**	23**	34**	24**
MBAS-R					.66**	.89**	.62**	.83**
BDI-II							.19*	.11*
BAI								
$R^2$	.07		.48		.85		.85	
$oldsymbol{F}$	5.82*		47.98**		225.24**		181.73**	
$\Delta R^2$	.07		.41		.37		.04	
$\Delta F$	5.82*		123.15**		391.75**		247.62*	

*Note*: PAge = Participants' age; RelLen= Relationship Lenght.

These findings strongly support Hypothesis 3 concerning the role played by relationship satisfaction, body image, and depression in influencing SPPPU.

# 3.3 Mediation Analyses

Based on previous results, we explored the direct and indirect effects of depression on SPPPU, through the variable of relationship satisfaction. We found both direct and indirect effects, as reported in Table 4. The coefficient of the direct effect was .75 (95% CI [.61, .89]), and the coefficient of the indirect effect was .27 (95% CI [.18, .38]). These findings strongly support Hypothesis 4, indicating that SPPPU is associated with depression and relationship satisfaction. Moreover, the negative coefficient between depression and GLRSS (-.70) strongly supports Hypothesis 1, thus indicating that participants reporting higher levels of depression showed lower relationship satisfaction.

**Table 4.** Mediated Outcomes on CYPAT Showing Indirect Effects of BDI-II through GLRSS (N = 158)

		Consequent						
	(	GLRSS		CYPAT				
Antecedent	Coefficients	SE	р	Coefficients	SE	Р		
BDI-II	70	.08	< .001	.75	.07	< .001		
GLRSS	-	-	-	38	.06	< .001		
Constant	67.18	1.65	< .001	33.01	4.12	< .001		
	F	$8^2 = .33$		$R^2 = .69$				
	F(1,156) =	= 78.49, <i>p</i> <	.001	F(2,155)	(5) = 175.16, p < .001			

<sup>\*</sup>  $p \le .01$ ; \*\*  $p \le .001$ .

#### 4. Discussion

The present study examined the relationships among relationship satisfaction, body image, depression, and SPPPU in a sample of Italian gay and bisexual men. In line with the literature findings on heterosexual and LGBT samples, we hypothesized a negative relation between relationship satisfaction, body dissatisfaction, depression, and SPPPU, as well as a positive relation between body dissatisfaction, depression, and SPPPU.

The current findings confirm a strong link among relationship satisfaction, body image, depression, and SPPPU. Specifically, according to previous studies on heterosexual individuals and couples (e.g., Böthe et al., 2017; DeBleare, & Brewster, 2017; Hesse & Floyd, 2019; Whitfield et al., 2018), our results strongly support the hypothesis of a negative correlation between relationship satisfaction and SPPPU in gay and bisexual men. According to Daspe et al. (2018), we can affirm that, for sexual minority men, relational context and relationship satisfaction play a pivotal role in influencing the problematic use of pornographic Internet content. Moreover, according to Peter and Valkenburg (2010), the problematic use of pornographic Internet material might be a maladaptive way to escape from an unsatisfying individual and relational life.

Research on relationship satisfaction in LGBT samples has often shown the significant effect of relationship status. In line with previous studies, our results are consistent with the hypothesis that civil unions have a positive effect on relationship satisfaction (e.g., Lannutti, 2018; Riggle et al., 2017; Sommantico et al., 2018, 2020, 2021), thus indicating that the legitimization of same-sex civil unions may strengthen same-sex couple relationships (e.g., Newton Webb & Chonody, 2014). Furthermore, the present findings indicate that relationship length is negatively correlated with body dissatisfaction, depression, and SPPPU. We can hypothesize that a long-lasting and satisfying couple relationship represents an important protective factor for individuals' well-being.

Confirming previous literature findings (e.g., DeBleare & Brewster, 2017; Gleason & Sprankle, 2019; Kvalem et al., 2016), our results indicate a strong association between sexual minority men's body image and dissatisfaction, and gay male pornography consumption. Our results also confirm findings from previous research (e.g., Blashill, 2010; Duggan & McCreary, 2004; Hesse & Floyd, 2019; Whitfield et al., 2018) that indicate a positive relationship among body dissatisfaction, depression, and SPPPU. Overall, these findings confirm the hypothesis that exposure to pornography, which typically shows mesomorphic men's body images, is highly positively correlated with body dissatisfaction (e.g., Barlett et al., 2008; Levesque & Vichesky, 2006; Morrison et al., 2007), as well as with depression (e.g., Agliata & Tantleff-Dunn, 2004;

Whitfield et al., 2018). According to a Social Comparison Theory framework (Festinger, 1954), we can hypothesize that gay and bisexual men might negatively compare themselves to the "ideal body" of male actors in gay male pornography, as indicated by Schwartz (2009). In a similar way, in line with the Objectification Theory framework (Fredrickson & Roberts, 1997), we can hypothesize that gay and bisexual men self-objectify with a consequent increase in body dissatisfaction, as indicated by Martins et al. (2007).

Contrary to previous research findings (e.g., Baltazar et al., 2010; Hardy et al., 2013; Perry, 2017; Short et al., 2015), no statistically significant differences emerged between pornography consumption and religiosity, thus indicating that individuals' religious beliefs do not affect (both positively and/or negatively) pornography use. We can interpret this data in light of the unbalanced religiosity in our sample. Indeed, only 31.6% of the participants declared explicit religious/Catholic beliefs.

In our study, relationship satisfaction, body dissatisfaction, and depression accounted for significant variance over and above demographic variables in SPPPU. In particular, the present findings indicate that higher relationship satisfaction is related to lower body dissatisfaction, depression, and SPPPU. Finally, the current study shows a direct effect of depression on SPPPU, as well as an indirect effect of depression on SPPPU, via relationship satisfaction. Specifically, our results indicate that depressed gay and bisexual men may be at risk for SPPPU, due to lower levels of relationship satisfaction.

# 4.1 Strengths and Limitations

To our knowledge, this is the first completed Italian study to evaluate relationship satisfaction, body image, SPPPU, and psychosocial outcomes (e.g., depression, anxiety, and life satisfaction) in a sample of gay and bisexual men.

The first general limitation to our study relates to sampling. The sample is relatively small, and data were collected in a way that may have led to bias, limiting the generalizability of results. Indeed, participants were recruited via LGBT Associations, LGBT list-servs, LGBT discussion boards, and LGBT research centers, further limiting the samples' representation of the broader population. Moreover, the stigmatization processes that may impede individuals' full disclosure to researchers and, thus, their participation in studies, might represent another limitation. Because of this, online surveys are an important and convenient method of collecting data from LG populations, but often with not very large samples (e.g., Hartwell et al., 2017).

Despite this, community-based sampling and snowball sampling might imply specific possible biases: e.g., bias related to the special characteristics of individuals who voluntarily participate

in a study. Another possible bias in this study is the mono-method nature of the research. Indeed, having assessed all variables of the study by using self-report instruments, there could be inflation in observed associations. To this end, future research should integrate quantitative with qualitative data, such as clinical interviews, to explore deeper aspects of relationship satisfaction, body image, and SPPPU, as well as psychosocial outcomes, which are not easily accessible via self-report instruments. The cross-sectional study design also limits the conclusions that can be drawn, and future longitudinal research designs could be envisaged, which would also allow for causal inferences to be carried out, which in this study was not possible.

#### 5. Conclusions

In summary, the findings of the present study support the hypothesis of a relationship between body dissatisfaction and depression, as well as between depression and SPPPU, as mediated by relationship satisfaction. This study highlights the pivotal role of relationship satisfaction in evaluating and assessing SPPPU in gay and bisexual men. Specifically, and consistent with previous research, our findings suggest that higher levels of relationship satisfaction are related to lower levels of negative body attitudes, lower levels of depression, and lower SPPPU. Moreover, higher levels of negative body attitudes appear related to higher levels of depression and SPPPU.

In this regard, when it comes to interventions directed at reducing depressive symptomatology in gay and bisexual men, it could be relevant to incorporate a focus on body image. In particular, clinical interventions aimed at overcoming depression could explore negative thoughts related to body image, as well as individuals' reception and internalization of sexually explicit, mesomorphic media messages, following the hypothesis that reducing body dissatisfaction may have a positive effect on reducing depressive symptomatology. Furthermore, preventive and clinical intervention for gay and bisexual men with self-perceived problematic pornography use could integrate a specific focus on relationship satisfaction.

#### **Conflict of Interest Statement**

The authors declare that the research was conducted in the absence of any potential conflict of interest.

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