




“I Do Not Like Being Me”: the Impact of Self-hate on Increased Risky Sexual Behavior in Sexual Minority People

Maria Rosaria Nappa¹ · Maria Giuseppina Bartolo² · Jessica Pistella³ · Nicola Petrocchi⁴ · Angela Costabile⁵ · Roberto Baiocco⁶ 

Accepted: 9 May 2021 / Published online: 21 May 2021
© The Author(s) 2021

Abstract

Background Increased risky sexual behaviors (RSB) in sexual minority people relative to heterosexual individuals are well documented. However, the role of trans-diagnostic factors that are not sexual orientation-specific, such as self-criticism, in predicting RSB was understudied. The present study aimed to test participants' gender and sexual orientation as moderators between self-criticism and RSB.

Methods Data were collected during 2019. The total sample included 986 sexual minority people ($N_{\text{women}} = 51\%$) and 853 heterosexual people ($N_{\text{women}} = 46\%$), ranging from 18 to 35 years of age. Self-criticism dimensions (self-hate, self-inadequacy, self-reassurance), types of positive affect (relaxed, safe/content, and activated affect), and RSB were assessed. Bivariate, multivariate analyses, and moderated regression analyses were conducted.

Results Sexual minority participants showed higher levels of RSB, self-hate, and self-inadequacy than heterosexual people. Only in sexual minority men, RSB correlated positively with self-hate and negatively with safe/content positive affect. Moderated regressions showed that only for sexual minority participants, higher RSB were predicted by higher levels of self-hate. At the same time, this association was not significant for heterosexual people controlling the effects of age, presence of a stable relationship, other self-criticism dimensions, and activation safe/content affect scale. The two-way interaction between sexual orientation and gender was significant, showing that regardless of self-hate, the strength of the association between sexual orientation and RSB is stronger for sexual minority men than sexual minority women and heterosexual participants.

Conclusions Findings highlight the distinctive role of self-hate in the occurrence of RSB in sexual minority people and support the usefulness of developing a compassion-focused intervention to target self-hate in sexual minority people.

Keywords Risky sexual behaviors · Sexual minority people · Self-criticism · Positive affects

Introduction

A burgeoning body of literature has been underlining that risky sexual behaviors (RSB) and high rates of sexually transmitted infections are more prevalent among sexual

minority people than heterosexual people (Blake et al., 2001; Everett et al., 2014; Mustanski et al., 2011; Tornello et al., 2014). RSB have been defined as sexual activities that expose individuals to adverse health outcomes, such as sexually transmitting infections and unintended pregnancies

✉ Roberto Baiocco
roberto.baiocco@uniroma1.it

Maria Rosaria Nappa
mariarosaria.nappa@unirc.it

Maria Giuseppina Bartolo
mariagiuseppina.bartolo@unical.it

Jessica Pistella
jessica.pistella@uniroma1.it

Nicola Petrocchi
npetrocchi@johncabot.edu

Angela Costabile
angela.costabile@unical.it

¹ Department of Law, Economics and Human Sciences, Mediterranean University of Reggio Calabria, Calabria, Italy

² Department of Cultures, Education and Society, University of Calabria, Rende, Italy

³ Department of Developmental and Social Psychology, Sapienza University of Rome, Rome, Italy

⁴ Department of Economics and Social Sciences, John Cabot University, Rome, Italy; Compassionate Mind Italia, Rome, Italy

⁵ Department of Cultures, Education and Society, University of Calabria, Rende, Italy

⁶ Department of Developmental and Social Psychology, Sapienza University of Rome, Rome, Italy

or abortions (Chawla & Sarkar, 2019; Kann et al., 2018, World Health Organization, 2018). A large variety of activities have been identified to capture the complexity of sexual risk patterns such as unprotected sex, irregular/multiple/paid sexual partners, concomitant substance use, and non-consensual sex (Chawla & Sarkar, 2019; Potard et al., 2019; Vasilenko et al., 2015). Risky sexual activity rates could vary according to the cultural context, socioeconomic status, age, sex, and sexual orientation (Schuster et al., 2013; Schwartz et al., 2012).

Traditionally, studies on RSB have prevalently focused on men participants and showed that sexual minority men reported a greater probability of RSB and HIV infection than heterosexual men (Glick et al., 2012; Mustanski et al., 2011; Weatherburn et al., 2019). Most recent research has considered other sexual minority subgroups, such as sexual minority women (Dermody et al., 2020; Poteat et al., 2019). For example, sexual minority women and women who reported at least one female sexual partner engaged in greater RSB and were at higher risk of sexually transmitted infections, including HIV infection, compared to exclusively heterosexual women (Bailey et al., 2003; Goodenow et al., 2008; Tat et al., 2015). Furthermore, Tornello et al. (2014), using a U.S. nationally representative sample, found that sexual minority women reported having been younger at first sexual intercourse than their heterosexual counterparts. Beyond gender differences, early sexual debut, a high number of sexual partners, and sex under the influence of drugs or alcohol emerged as specific risky indices among sexual minority people compared to heterosexual people (Glick et al., 2012; Lowry et al., 2017; Plöderl & Tremblay, 2015).

Moreover, recent studies underlined the co-occurrence of diverse individual and psychosocial factors, i.e., substance use, depressive symptoms, childhood sexual abuse, intimate partner violence, and sexual compulsivity, to explain the high rates of RSB among lesbian, gay, and bisexual people (Parsons et al., 2012, 2017; Scheer et al., 2019). Despite the efforts to identify these factors that can explain elevated RSB rates in sexual minority people, few studies have investigated the disparities in correlates and predictors of RSB of sexual minority people compared to heterosexual people. Indeed, Oginni et al. (2020) showed that mental health disparities mediated the impact of sexual orientation on RSB, and both externalizing disorders (e.g., alcohol and substance use) and internalizing disorders (e.g., depressive symptoms and anxiety) were higher in non-heterosexual individuals (King et al., 2008; Plöderl & Tremblay, 2015).

Furthermore, Dermody et al. (2020) with a longitudinal study, found that sexual minority-related victimization and heavy drinking may play important roles in explaining disparities in RSB among sexual minority girls: High levels of

peer victimization among sexual minority girls predicted increased heavy episodic drinking, which was subsequently associated with RSB. Internalized sexual stigma, described as feelings of shame and low self-worth related to sexual minority identities (Herek et al., 2009), represented a significant predictor of psychological distress and mental health adverse outcomes among sexual minority people (Baiocco et al., 2015; Newcomb & Mustanski, 2010; Russell & Horn, 2016).

A psychological process positively linked to shame and internalized sexual stigma that could potentially have a role in explaining the increased occurrence of RSB in sexual minority people is self-criticism (Gilbert et al., 2012; Petrocchi et al., 2019; Puckett et al., 2015). Self-criticism is defined as a negative self-to-self relationship that people might activate towards themselves mainly in response to failures or setbacks (Whelton & Greenberg, 2005). This process often takes the form of negative self-talk, which stimulates the same neuro-physiological systems as criticism generated by others (Gilbert et al., 2006; Longe et al., 2010). As opposed to self-criticism, emerged an adaptive form of self-to-self relating defined self-reassurance. Self-reassurance, as a significant component of self-compassion, represents the ability to have a positive, warm, and accepting attitude towards the self when things go wrong (Gilbert et al., 2004).

Self-criticism represents a relevant trans-diagnostic risk factor for several mental health problems, such as depressive symptoms, social anxiety, eating and personality disorders, psychotic symptoms, and interpersonal difficulties (Muris & Petrocchi, 2017; Werner et al., 2019). Trans-diagnostic label generally refers to factors present across mental disorders and are either a risk or maintaining factors for the disorder (Krueger et al., 2015). In recent years research has shown that it is crucial to distinguish between different forms and functions of self-criticism (Gilbert et al., 2004; Kanovský et al., 2020). Some individuals are self-critical because they experience failure and feel they should and could do better, which may be linked to a sense of self-inadequacy. Others have a self-hating attitude to the self and want to get rid of aspects of it, not with the intention to improve but rather to punish themselves (Gilbert et al., 2004). In a study of psychiatric patients, Castilho et al. (2017) found that concerns of being inadequate and self-hating forms of self-criticism linked to psychopathology in different ways, with self-hating being mainly related to shame.

Regarding sexual minority people, the difficulty of accepting their sexual orientation has led to increased self-hate and self-inadequacy (Szymanski & Ikizler, 2013). Moreover, Baiocco et al. (2018) found that gay men reported higher levels of homophobic bullying in sports-related contexts than heterosexual men. Those who were victims of bullying reported higher levels of self-hate and self-inadequacy than those who reported lower bullying

frequencies. Similarly, Smith et al. (2020a) showed that sexual minority adolescents responded with increased levels of negative emotions and self-criticism to discrimination episodes compared to heterosexual participants.

Indeed, several studies have investigated the negative impact of self-criticism on sexual minority people's well-being (Greene & Britton, 2015; Matos et al., 2017). Puckett et al. (2015) found that self-criticism partially mediated the relationship between internalized sexual stigma and negative mental health outcomes in a sexual minority sample. Matos et al. (2017) found that sexual minority men seem to be less self-compassionate than heterosexual men, and this self-relating process emerged to be more strongly correlated with internal shame and depression than the heterosexual counterparts.

Another recent study (Petrocchi et al., 2020) showed a negative correlation between self-criticism and the dimensions of the Lesbian, Gay, and Bisexual Positive Identity Measure (i.e., self-awareness, authenticity, community, and intimacy; Riggle et al., 2014). A retrospective study by Greene and Britton (2015) found that feelings associated with childhood warmth, safeness, and self-compassion predict happiness in sexual minority adults. Gilbert et al. (2008) suggested that self-criticism, linked to different social experiences and self-evaluations, is associated with three types of positive affect: activated positive affect, relaxed positive affect, and safe/content positive affect. Furthermore, the authors underlined that safe/content positive affect represents a crucial predictor of reduced self-criticism and increased self-reassurance.

According to these findings, self-criticism may represent a psychological mechanism through which minority stress affects mental health and psychological well-being and may play a key role in the increased RSB shown by sexual minority people. In fact, studies have linked self-criticism to compulsive sexual behavior and sexual addiction (Efrati & Gola, 2019; Reid, 2010): For example, Efrati and Gola (2019), in a sample of Sexaholics Anonymous members and healthy volunteers, demonstrated that higher self-criticism was associated with higher levels of compulsive sexual behavior; self-related factor also mediates the links between early life trauma and compulsive sexual behavior.

Other studies associated disorders related to sex addiction with self-hate (Kaplan & Krueger, 2010; Kort, 2004; Schwartz & Brasted, 1985). Reid et al. (2009) found that male hypersexual clients were more prone to attack the self (e.g., self-hostility) and appear to use sex as an outlet to self-medicate their painful affective experiences. Despite pathogenic qualities of self-criticism found in sexual minority people and its link to RSB, to our knowledge, no study has previously investigated the association between self-criticism dimensions and RSB disparities in sexual minority

people and heterosexual individuals. Indeed, most of the literature has focused on group-specific and psychosocial variables, overlooking the role of self-related processes in the increased risk of RSB among sexual minority people.

The main goal of this study was to examine the role of gender and sexual orientation as moderators between self-criticism dimensions and RSB. Based on the aforementioned empirical findings, we made several predictions. First, based on previous studies (Glick et al., 2012; Goodenow et al., 2008; Poteat et al., 2019; Tat et al., 2015; Weatherburn et al., 2019), we expected to find higher levels of RSB in sexual minority people than heterosexual people (Hypothesis 1). Second, given the strong link between minority stress and hostile self-relating, we hypothesized that sexual minority people would show increased levels of negative dimensions of the self-relating process (self-inadequacy and self-hate) compared to heterosexual people (Matos et al., 2017; Smith et al., 2020a, b) (Hypothesis 2). Given that “negative” (self-criticism) and “positive” self-relating (self-reassurance), even if they tend to correlate, have been found to be distinct processes (Petrocchi et al., 2019), we had no specific hypothesis on the potential effect of sexual orientation on levels of self-reassurance and types of positive affect usually linked to self-reassurance (i.e., feeling safe and content; Gilbert et al., 2008).

Third (Hypothesis 3), regarding group differences in relationships between self-criticism dimensions and RSB, we hypothesized that the more pathogenic form of self-relating process, i.e., self-hate, would be distinctively linked to increased RSB rates among sexual minority people. In fact, RSB have shown many functional similarities with non-suicidal self-injury, which is strongly linked to self-hate (Jonsson et al., 2019), and self-injurious thoughts and behaviors were found to be related to sexual risk behaviors, mostly via increased dysregulated emotional control (Marraccini et al., 2019). Moreover, a recent meta-analysis found that self-criticism was a transdiagnostic process in non-suicidal self-injury (Zelkowitz & Cole, 2019), and the frequency of non-suicidal self-injury is associated with impulsive decision-making during actual or imagined criticism in close relationships (Allen et al., 2019).

Finally (Hypothesis 4), we expected to find that self-hate would predict RSB specifically in sexual minority men, even when controlling for potentially confounding variables such as age, the presence of a stable relationship, and positive self-relating (i.e., self-reassurance and positive affect). In specific contexts, like the Italian one, sexual minority men are exposed to greater pressure to conform to a heteronormative gender role and sexual prejudice (D’Augelli & Grossman, 2001; Lingiardi et al., 2012; Vaughan & Rodriguez, 2014) than sexual minority women: This may lead to maladaptive self-hate patterns and higher rates of RSB in sexual minority men than sexual minority women and heterosexual people.

Methods

Procedures

Data were collected from May to September 2019. Participants were recruited through online advertisements and an Internet-based survey (hosted by SurveyMonkey). Participants were from universities, community recreational centers, and workplaces in Rome, Italy. Since the sexual minority participants were near 10% of the total sample, other advertisements posted on websites and social networks were directed toward the recruitment of sexual minority people. Thus, the majority (50%) was recruited from lesbian, gay, and bisexual organizations in university and community settings in Rome (Italy). The remaining 40% was recruited via several professional mailing lists and web advertising.

Participation in the study was voluntary and anonymous, and they were given 10–15 min to complete the survey. Informed consent was obtained from all participants, and those who accepted to take part in the study were given a link to access an internet-based survey. To meet the inclusion criteria, participants had to (a) be of Italian nationality, (b) self-identified as a sexual minority or heterosexual person. On the basis of these criteria, 4 participants were excluded because their nationality was not Italian, 11 were removed because self-identify as transgender, and other 15 participants were not included because they selected “other”, but they did not clarify their gender in the box provided. A total of 98% of distributed questionnaires were completely filled in.

Before the data collection began, the research protocol was approved by the Ethics Commission of the Department of Developmental and Social Psychology of the Sapienza University of Rome. All procedures performed with human participants were conducted in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration.

Participants

The final sample consisted of 1,839 participants who self-identified as sexual minority people ($n = 986$, 54%), including 510 sexual minority women (51%), or heterosexual people ($n = 853$, 46%), including 484 heterosexual women (56%), with age ranging from 18 to 35 (sexual minority people: $M_{age} = 27.46$, $SD = 5.63$; heterosexual people: $M_{age} = 27.23$, $SD = 4.84$). The sexual minority people and heterosexual people did not differ significantly in age, $t(1837) = 0.93$, $p = 0.228$.

Measures

Demographic Information Baseline sociodemographic variables, such as age, gender, sexual orientation, were evaluated. Participants indicated their gender by answering an item with three alternative responses (1 = men, 2 = women, 3 = other). Participants were asked to report their sexual orientation by answering an item with three alternative responses (1 = sexual minority people, 2 = heterosexual people, 3 = other). In the case of the “other” alternative, participants were allowed to specify their sexual orientation. The presence of a stable relationship was investigated by the following item: “Do you have, at this time, a stable romantic relationship?” The answer modality was dichotomous (0 = no, 1 = yes).

Risky Sexual Activities A subscale of the CARE questionnaire (Fromme et al., 1997) was used to assess outcome expectancies for RSB. This subscale consists of four items that assess the frequency in which individuals engaged in RSB during the past 6 months (e.g., sex with multiple partners; sex without protections; sex with a casual or unknown partner). Participants responded on a 5-point Likert scale, ranging from 1 (*never*) to 5 (*frequently*). A mean score for these items was used, with higher scores indicating a greater level of RSB. This subscale has shown good construct and criterion validity (e.g., Fromme et al., 1997). In the current study, Cronbach’s α value was 0.69.

Trait Self-Criticism and Self-Reassurance The Forms of Self-Criticizing and Self-Reassuring Scale—short form (FSCRS – short form; Sommers et al., 2017) was used to measure participants’ dispositional tendency towards self-criticism and self-reassurance “when things go wrong”. The FSCRS short form has fourteen items and three subscales: hated self (e.g., I have a sense of disgust with myself), inadequate self (e.g., I am easily disappointed with myself), and reassured self (e.g., I find it easy to forgive myself). A mean score for each of the three scales derived from the 5-point Likert-type scale ranged from 0 (*not at all like me*) to 4 (*extremely like me*), whereby higher scores indicated greater self-criticism (inadequate self), self-hate (hated self), and self-reassurance (reassured self). In the present study, Cronbach’s α values were 0.75 (hated self), 0.83 (inadequate self), and 0.82 (reassured self).

Types of Positive Affect Scale (TPAS) The Types of Positive Affect Scale (TPAS) is a self-report measure designed to measure various positive affect types (Gilbert et al., 2008). The measure consists of 18 positive emotion words rated on a Likert scale from 0 (not characteristic of me) to 4 (very characteristic of me). The measure yields three lower-order

positive affect facets: active (e.g., “energetic”, “excited”), relaxed (e.g., “peaceful”, “calm”), and safe/warmth (e.g., “secure”, “warm”) positive affect. In the current sample, Cronbach’s α values were 0.87 (relaxed), .78 (safe/content), and 0.89 (activated). Descriptive statistics of the measures are shown in Table 1.

Data Analysis

Bivariate and multivariate analyses multiple regression analyses were conducted using SPSS 25. Group (in terms of sexual orientation) and gender differences were analyzed using univariate (ANOVA) and multivariate analysis of variance (MANOVA). Bivariate correlations (Pearson’s r , two-tailed) were performed to examine the associations among participants’ age, presence of a stable relationship, FSCRS subscales, activation safe/content affect scale, and RSB.

Moreover, we examined different moderation models to test specific mechanisms underlying the relationship between hated self and RSB. Thus, a series of multiple regression analyses were conducted to examine the main and interaction effects of sexual orientation, gender, and hated self on RSB. In particular, using the PROCESS SPSS macro (Hayes, 2013), regressions were conducted to evaluate moderation and moderated moderation analyses with bias-corrected bootstrapping using 5000 samples with a 95% confidence interval (CI).

More specifically, Model 1 analyzed a two-way interaction between the hated self and sexual orientation, while Model 2 analyzed a two-way interaction between the hated self and gender. Model 3 examined another two-way interaction between sexual orientation and gender. Additionally, the last model investigated a three-way interaction among the hated self, sexual orientation, and gender on RSB. Interaction effects were probed using the PROCESS analysis. We included covariates to adjust for age, presence of a stable relationship, the inadequate and reassured self-dimensions, and activation safe/content affect scale.

Results

Sexual Orientation Differences Among Variables

A series of ANOVA and MANOVA was used to examine the differences of sexual orientation among key variables (see Table 1 for more details). Briefly, the analysis revealed a significant effect for sexual orientation on RSB, $F(1,1837) = 108.34$ $p < 0.01$, $\eta_p^2 = 0.06$, and FSCRS scale, $Wilks' \Lambda = 0.98$; $F(3,1835) = 15.91$; $p < 0.001$, $\eta_p^2 = 0.03$. In particular, sexual minority people showed higher levels of RSB, hated self, and inadequate self,

Table 1 Descriptive (means, standard deviations, and sexual orientation differences) of the sample’s characteristics

	Sexual minority people (n = 986)			Heterosexual people (n = 853)			Total sample (n = 1,839)		
	Total	Women	Men	Total	Women	Men	Total	$t/\chi^2/F$	p
	Risky sexual behaviors (RSB)	1.46(.59)	1.31(.49)	1.62(.64)	1.21(.39)	1.12(.28)	1.34(.47)	1.35(.52)	108.34
Hated self (FSCRS)	1.69(.77)	1.82(.84)	1.53(.65)	1.48(.61)	1.49(.60)	1.47(.62)	1.59(.71)	37.87	<.001
Inadequate self (FSCRS)	2.82(.90)	2.86(.91)	2.77(.89)	2.61(.87)	2.71(.90)	2.48(.83)	2.72(.89)	23.70	<.001
Reassured self (FSCRS)	3.34(.83)	3.28(.86)	3.40(.80)	3.36(.78)	3.30(.80)	3.44(.74)	3.35(.81)	.34	.561
Relaxed (TPAS)	3.04(.78)	2.95(.77)	3.13(.78)	3.13(.74)	2.97(.68)	3.32(.76)	3.07(.77)	NS	NS
Safe/content (TPAS)	3.25(.78)	3.22(.78)	3.28(.78)	3.32(.73)	3.26(.73)	3.39(.71)	3.28(.76)	NS	NS
Activated (TPAS)	3.28(.78)	3.25(.78)	3.32(.77)	3.32(.70)	3.22(.68)	3.45(.71)	3.31(.74)	NS	NS
Age (years)	27.46(5.63)	26.23(5.34)	28.78(5.62)	27.23(4.79)	27.27(4.84)	27.19(4.72)	27.36(5.25)	.93	.354
Relationship (yes)	535(54%)	292(57%)	243(51%)	526(62%)	319(66%)	207(56%)	1061(58%)	10.25	<.001

The $t/\chi^2/F$ refers to the sexual orientation differences in the total sample (sexual minority vs. heterosexual). Standard deviations and percentages are in parentheses. Participants rated the continuous measures on risky sexual behaviors (1 = never to 5 = frequently); self-criticizing subscales (0 = not at all like me to 4 = extremely like me); activation safe/content affect scale (0 = not characteristic of me to 4 = very characteristic of me)

NS Wilks’ Lambda was non significant

* $p < .05$; ** $p < .01$

Table 2 Pearson's *r* between risky sexual behaviors and other variables in sexual minority people: associations for sexual minority men (*n* = 476, below the diagonal) and sexual minority women (*n* = 510, above the diagonal)

	1	2	3	4	5	6	7	8	9
1. Risky sexual behaviors (RSB)	1.00	.07	-.01	.01	.06	-.01	.13**	-.03	-.28**
2. Hated self (FSCRS)	.15**	1.00	.60**	-.45**	-.34**	-.29**	-.34**	-.23**	-.02
3. Inadequate self (FSCRS)	-.03	.54**	1.00	-.45**	-.44**	-.31**	-.33**	-.18**	-.08
4. Reassured self (FSCRS)	-.05	-.42**	-.43**	1.00	.60**	.50**	.55**	-.11**	.01
5. Relaxed (TPAS)	-.02	-.42**	-.50**	.59**	1.00	.61**	.59**	.10*	.10*
6. Safe/content (TPAS)	-.12**	-.40**	-.41**	.55**	.74**	1.00	.53**	.01	.23**
7. Activated (TPAS)	.02	-.33**	-.36**	.61**	.65**	.66**	1.00	.06	-.11
8. Age (years)	.06	-.17**	-.17**	.06	.12**	.10*	-.02	1.00	.05
9. Relationship (0 = no, 1 = yes)	-.27**	-.06	-.03	.04	.06	.20**	.05	.12**	1.00

Participants rated the continuous measures on risky sexual behaviors (1 = *never* to 5 = *frequently*); self-criticizing subscales (0 = *not at all like me* to 4 = *extremely like me*); activation safe/content affect scale (0 = *not characteristic of me* to 4 = *very characteristic of me*)

* $p < .05$; ** $p < .01$

compared to heterosexual people. On the contrary, there were not found differences between sexual minority people and heterosexual participants on activation safe/content affect scale, *Wilks' Lambda* = 0.99; $F(3,1835) = 2.11$; $p = 0.097$, $\eta_p^2 < 0.01$. Means, standard deviations, and other statistical values are shown in Table 1.

Variables Associated with Risky Sexual Activities

We performed correlations between demographic variables, FSCRS subscales, activation safe/content affect scale, and RSB. Given that preliminary analyses showed a weak significant association between RSB and self-hate using the total sample, $r = .07$, $p < 0.05$, we decided

to perform four association matrices taking into account their sexual orientation and gender: Sexual minority men and women (Table 2) vs. heterosexual men and women (Table 3). First, findings displayed that all the self-criticism dimensions (hated self, inadequate self, and reassured self) correlated significantly with activation safe/content affect scale measures.

We found that the RSB scale was positively associated with the absence of a stable relationship in all participants, regardless of sexual orientation or gender. Besides, only in sexual minority men, there was a positive association between RSB and self-hate, but also a negative association between RSB and the safe/content subscale (Table 1). In women participants, regardless of sexual orientation, higher RSB was associate with the activated subscale, while there was not the same association in man participants.

Table 3 Pearson's *r* between risky sexual behaviors and other variables in heterosexual people: associations for heterosexual men (*n* = 369, below the diagonal) and heterosexual women (*n* = 484, above the diagonal)

	1	2	3	4	5	6	7	8	9
1. Risky sexual behaviors (RSB)	1.00	.03	.01	.06	.08	-.06	.10*	-.07	-.18**
2. Hated self (FSCRS)	.02	1.00	.58**	-.35**	-.36**	-.23**	-.25**	-.07	-.10*
3. Inadequate self (FSCRS)	-.01	.43**	1.00	-.53**	-.48**	-.25**	-.32**	-.19**	-.01
4. Reassured self (FSCRS)	.01	-.24**	-.29**	1.00	.60**	.42**	.52**	.01	.03
5. Relaxed (TPAS)	-.07	-.34**	-.39**	.55**	1.00	.61**	.57**	-.04	.08
6. Safe/content (TPAS)	-.05	-.27**	-.31**	.54**	.69**	1.00	.54**	-.11*	.29**
7. Activated (TPAS)	.05	-.26**	-.25**	.55**	.60**	.66**	1.00	-.08	.08
8. Age (years)	-.05	-.14**	-.04	.02	-.10	-.07	-.10*	1.00	.03
9. Relationship (0 = no, 1 = yes)	-.36**	-.16**	-.03	.03	.09	.14**	.04	.19**	1.00

Participants rated the continuous measures on risky sexual behaviors (1 = *never* to 5 = *frequently*); self-criticizing subscales (0 = *not at all like me* to 4 = *extremely like me*); activation safe/content affect scale (0 = *not characteristic of me* to 4 = *very characteristic of me*)

* $p < .05$; ** $p < .01$

Risky Sexual Behaviors and Self-hate by Sexual Orientation and Gender

We conducted a series of moderated regression analyses to examine the degree to which sexual orientation and gender differences in self-hate predicted RSB levels. Table 4 shows the results of interaction effects among sexual orientation, gender, and self-hate. First of all, there were significant main effects of sexual orientation and gender for all models.

The two-way interaction effect with self-hate was only significant for sexual orientation (see Model 1), while for gender was not (see Model 2). With regard to covariates considered for all models, only the absence of a stable relationship, high activation, and low safe/content were associated with RSB. The age, the relaxed subscale, and the inadequate and reassured self-dimensions were unrelated to RSB.

To further explore the nature of the hated self X sexual orientation interaction effect, simple slopes analysis was performed (Fig. 1), with adjustments made for age, presence of a stable relationship, the inadequate and reassured self-dimensions and activation safe/content affect scale. Consistent with our hypothesis, the result revealed that the relationship between hated self and RSB was moderated by sexual orientation. For sexual minority participants, higher RSB were associated with higher levels of self-hate, $\beta=0.12$, $t=3.18$, $p=0.001$. In contrast, the relation between

RSB and self-hate was not significant for heterosexual participants, $\beta=0.02$, $t=0.64$, $p=0.519$. These results confirm that sexual orientation was a significant moderator of this relation, controlling the effects of age, presence of a stable relationship, the inadequate and reassured self-dimensions, and activation safe/content affect scale.

Again, Model 3 tested the two-way interaction among sexual orientation and gender using the Model 1 of PROCESS Macro. The two-way interaction was significant, $\beta=-2.32$, $t=-2.65$, $p=0.008$. Simple slope for sexual minority men, $\beta=0.52$, $t=7.30$, $p<0.01$, and sexual minority women, $\beta=0.28$, $t=5.96$, $p<0.001$, were both positive and significantly differed from zero (Fig. 2). Results indicate that, regardless of self-hate, the strength of the association between sexual orientation and RSB is stronger for sexual minority men compared to sexual minority women and heterosexual participants. Specifically, sexual minority men have significantly higher RSB than sexual minority women and heterosexual people, and that sexual minority women have significantly higher RSB compared to heterosexual women.

Finally, Model 4 showed that three-way interaction among sexual orientation, gender, and self-hate was not significant. However, as displayed in Table 4, sexual orientation significantly interacted with gender in its relationship with RSB, $\beta=-2.44$, $t=-2.77$, $p=0.005$. Thus, although the three-way interaction was not significant in the model, the

Table 4 Regression analyses for interaction effects on risky sexual behaviors (RSB)

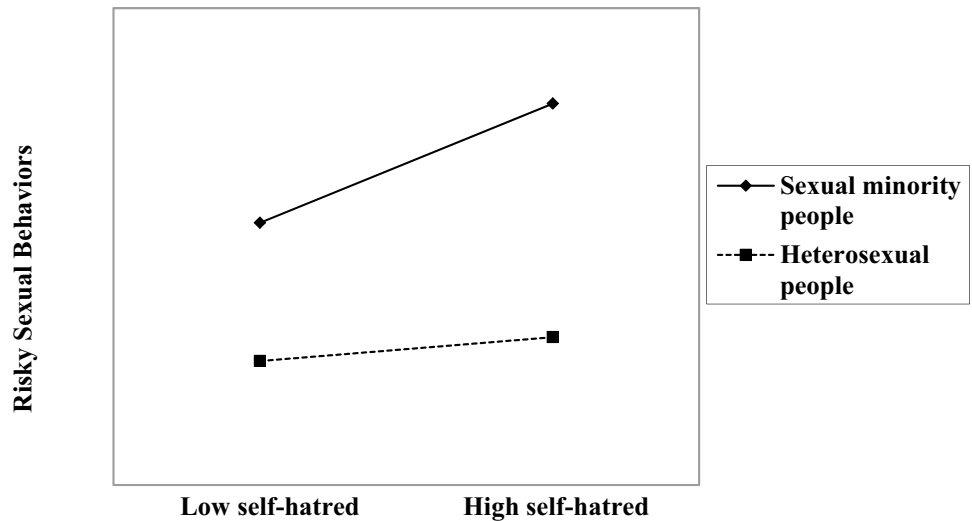
	Model 1	Model 2	Model 3	Model 4
	B(SE)	B(SE)	B(SE)	B(SE)
<i>Predictors</i>				
SO	-3.98(.41)***	-4.01(.40)***	-4.04(.42)***	-4.12(.42)***
Gender	4.65(.44)***	4.60(.45)***	4.50(.43)***	4.60(.44)***
Hated self (FSCRS)	.10(03)**	.09(03)**	.14(04)**	.13(04)**
<i>Covariates</i>				
Inadequate self (FSCRS)	-.02(.03)	-.02(.03)	-.03(.03)	-.03(.04)
Reassured self (FSCRS)	-.03(.03)	-.03(.03)	-.03(.03)	-.04(.04)
Relaxed (TPAS)	.02(04)	.03(03)	.03(03)	.04(04)
Safe/content (TPAS)	-.06(.03)*	-.07(.03)*	-.07(.03)*	-.08(.04)*
Activated (TPAS)	.13(.03)***	.12(.03)	.13(.04)	.17(.04)
Age (years)	.04(.02)	.04(.02)	.03(.02)	.03(.02)
Relationship (0=no, 1=yes)	-.49(04)***	-.48(04)***	-.48(05)***	-.50(05)***
<i>Interaction effects</i>				
Hated self X SO	-1.06(.47)*	/	/	-1.81(.70)**
Hated self X Gender	/	.88(.58)	/	.99(.74)
SO X Gender	/	/	-2.32(.87)**	-2.44(.88)**
Hated self X SO X Gender	/	/	/	-2.12(.46)
F	.36.48***	.36.72***	.39.17***	31.31***
R ²	.20	.20	.20	.21

All continuous variables were standardized to z-scores before analysis; results are presented as unstandardized estimates

SO sexual orientation

* $p < .05$; ** $p < .01$; *** $p < .001$

Fig. 1 Sexual orientation as a moderator of risky sexual behaviors and self-hatred



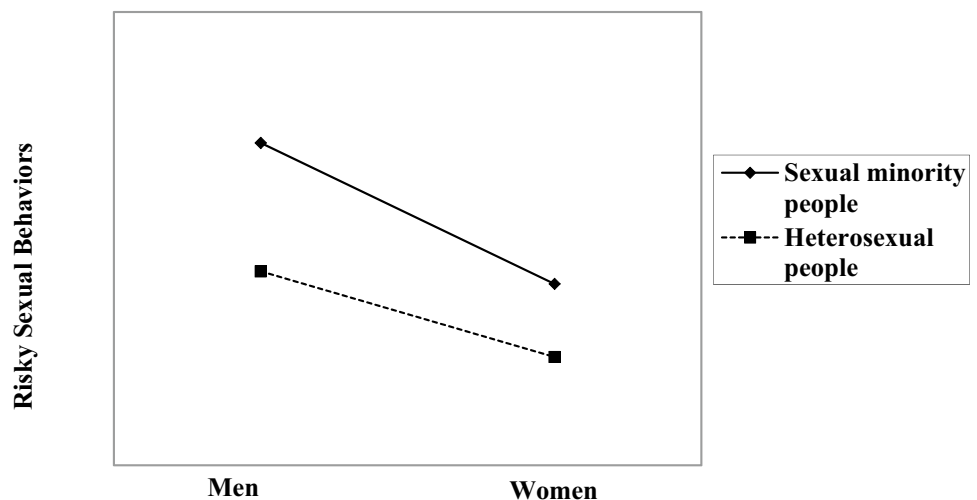
two-way interaction between sexual orientation and gender was significant in both models (see Model 3 and Model 4).

Discussion

Increased RSB in sexual minority people relative to heterosexual individuals are well documented (Blake et al., 2001; Mustanski et al., 2011). However, few studies have investigated the disparities in correlates and predictors of RSB of sexual minority people compared to heterosexual people. This study aimed to explore sexual orientation differences (sexual minority people vs. heterosexual individuals) on RSB and self-criticism dimensions. Consistent with Hypothesis 1, sexual minority participants showed higher rates of RSB. This finding is in line with literature showing that sexual minority people are more inclined to RSB than heterosexual individuals (Everett et al., 2014; Mustanski et al., 2011; Tornello et al., 2014).

Regarding differences in self-relating processes, consistently with Hypothesis 2, we found higher levels of self-hate and self-inadequacy in sexual minority participants compared to heterosexual people. Negative and continuative experiences (e.g., direct and indirect discriminations) related to their sexual minority identity may represent a possible driver of these disparities (Dermody et al., 2020; Meyer, 2003; Puckett et al., 2015). Interestingly, both types of “negative self-relationship” (self-inadequacy and self-hate), and not only the most severe form of “negative” self-relationship (i.e., self-hate), are more prevalent in sexual minority people than heterosexual individuals. This result suggests that sexual minority people, compared to heterosexual people, experience a more “negative” attitude toward the self that is not confined to “hating what they are”. However, it can be a more general and broadly devaluating view of themselves as not adequate and “not good enough” human beings. Indeed, this result echoed a recent meta-analysis, which found that self-esteem, negatively

Fig. 2 Sexual orientation as a moderator of risky sexual behaviors and gender



related to self-criticism, is lower in sexual minority people than in heterosexual individuals (Bridge et al., 2019).

Interestingly, we did not find significant group differences between sexual minority people and heterosexual individuals on “positive” self-relating (self-reassurance) and positive affect types. Indeed, several studies (e.g., Petrocchi et al., 2019) have suggested that self-criticism and self-reassurance are distinct processes and, even if they tend to correlate, they should not be considered positive and negative variations of a single dimension, with one pole simply representing the opposite or the absence of the other. Our data suggested that even if sexual minority people showed increased self-inadequacy and self-hate compared to heterosexual participants, they do not concomitantly show a reduced ability to be self-reassuring.

An individual belonging to a sexual minority is more likely to experience homophobic harassment, violence, or discrimination compared to heterosexual people, which usually result in the negative evaluation of the self, shame, and self-criticism (Baiocco et al., 2018; Nardelli et al., 2020). However, harassment and victimization coming from a part of the social world might not necessarily compromise the possibility for sexual minority people to build positive and nourishing relationships with compassionate others (siblings, teachers, and same and cross-orientation best friends). These significant others might still act as protecting figures for the individual (Baiocco et al., 2012), promoting the emergence of their self-reassuring abilities and positive affect in the face of adversities, not differently from heterosexual people.

Distinctive patterns emerged when we explored gender differences in relationships between self-criticism dimensions and RSB among sexual minority and heterosexual people. Consistent with Hypothesis 3, correlation analyses showed that RSB were positively associated with the dispositional tendency towards self-hate, but not with self-inadequacy, only in sexual minority men. This finding suggests that in sexual minority men, RSB are not linked to a general feeling of disappointment with themselves and self-inadequacy, but only to self-hate, which describes a sadistic and often persecuting desire to hurt the self (Gilbert et al., 2004). The relationship between RSB and self-hate that distinctively characterized sexual minority men was substantiated by the inverse significant relationship between RSB and safe/content positive affect that, again, emerged only in sexual minority men.

Safe/content positive affect, which encompasses a sense of peaceful well-being, feeling safe, and affection, is experienced by animals with an attachment system in social contexts characterized by non-threatening and care-focused relationships with others and exerts regulating effects on individuals (Depue & Morrone-Strupinsky, 2005; Gilbert et al., 2008). However, humans with our evolved human

minds, are also capable of creating *internal relationships with ourselves* (we can feel supportive, indifferent, or *hostile* to ourselves), and both interpersonal and intrapersonal (i.e., self-hate) maltreatment have found to reduce safe/content positive affect and compromise emotion regulation (Longe et al., 2010; Petrocchi et al., 2017).

Our findings seem to suggest that RSB in sexual minority men are distinctively linked to self-hate and to the consequent impaired ability to experience contentment and safeness in their inner world. This result is not surprising, given that many studies have suggested that sexual minority men are “visible targets” in specific cultural contexts and are more exposed to heteronormative pressure and discriminations than sexual minority women (D’Augelli & Grossman, 2001; Salvati et al., 2016; Vaughan & Rodriguez, 2014). Furthermore, other Italian studies showed that sexual minority men reported a higher negative evaluation of the self than sexual minority women (Baiocco et al., 2010; Lingiardi et al., 2012).

Conversely, in heterosexual and sexual minority women, RSB showed a positive correlation with activated positive affect. This finding indicates that, differently from sexual minority men, it is the emotional experience of arousal and excitement (and not self-hate or the lack of inner safeness) to be mainly involved in the emergence of RSB in these subgroups. Previous studies suggested that despite women’s proceptivity levels (behavior enacted to initiate, maintain, or escalate a sexual interaction) are lower than men’s (Diamond & Wallen, 2011), sexual sensation seeking and sexual excitability are more elevated in women than in men (Stief et al., 2014).

Regardless of gender and sexual orientation, the absence of a stable relationship was positively linked with the tendency to enact RSB and decreased emotional experience of safeness and contentment. Previous studies underlined that casual or abbreviated length relationships and infidelity represent risk factors for RSB (Mthembu et al., 2019; Schmitt, 2004). Engaging in more RSB when people are not in stable relationships seems not to be connected to an overall increase in the sense of excitement and arousal but to a decreased emotional experience of warmth, safeness, and contentment that stable relationships provide. Indeed, the sense of safeness is behaviorally de-activating (but is accompanied by positive affect) and evolved as a system to turn off ‘seeking’ via neuro-hormones such oxytocin and the opiate system (Colonnello et al., 2017; Depue & Morrone-Strupinsky, 2005; Panksepp, 2007; Porges, 2007).

Interestingly, only in heterosexual men and women did the absence of a stable relationship positively correlate with self-hate. One possible explanation for this result is that being in a stable relationship is felt more “normative” by heterosexual people than sexual minority people; thus, it is possible that the absence of a stable relationship is

experienced by heterosexual people as more linked to some intrinsic deficiency in the “self” (thus triggering self-hate), than to characteristics of the social environment. Inversely, for sexual minority people, even if the presence of a stable relationship is linked to a sense of safeness, the lack of it is more easily appraised as related to difficulties and obstacles posed by the heteronormative society they live and not necessarily reflecting something intrinsically negative about the self (Diamond & Lucas, 2004): When individuals become part of a same-sex couple are potentially exposed to adjunctive experiences of prejudice and discrimination on a social, political and legal level (Frost et al., 2017).

Moderation analyses shed more light on the interactive impact of sexual orientation, self-hate, and gender on RSB. First of all, in all model tested, there were significant main effects of sexual orientation, gender, and self-hate, which confirmed the relevance of these variables in predicting RSB, also when controlling for potentially confounding variables such as age, the absence of a stable relationship, other types of self-relating processes, and positive affect. Regarding interactions, partially in line with our expectations (Hypothesis 4), only sexual orientation, but not gender moderated the impact of self-hate on RSB.

For sexual minority participants, regardless of gender, higher RSB were predicted by higher levels of self-hate, while the relation between RSB and self-hate was not significant for heterosexual participants. Thus, self-hate represents a specific risk factor for sexual minority people. This is not surprising, given that in sexual minority participants, whose emotion dysregulation are often provoked by stress related to sexual minority identities (Hatzenbuehler & Pachankis, 2016), RSB could represent a way “to punish oneself” (McDermott et al., 2008) or “to stop bad feelings” (Crepaz & Marks, 2001), that is one of the most common psychological functions of sexual risk-taking (Fredlund et al., 2020).

Indeed, RSB have been defined as a form of self-injury that can be experienced as unintended (Muehlenkamp, 2005; Nock, 2010; St. Germain & Hooley, 2012) or/and deliberate behaviors. As often found, such self-injury behaviors were well documented in sexual minority adolescents, underlining that high levels of self-injury behaviors are more frequently reported in sexual minority people than heterosexual counterparts (Fredlund et al., 2017). Generally, research demonstrated that elevated rates of self-destructive behaviors among sexual minority people emerged when strategies to manage the internal and external negative evaluation, such as victimization experiences linked to sexual stigma and the internalization of this same stigma, failed (Baiocco et al., 2010; King et al., 2008; McDermott et al., 2008).

Results also indicated that, regardless of self-hate, the strength of the association between sexual orientation and RSB is stronger for sexual minority men compared to sexual minority women and heterosexual participants. Specifically,

sexual minority men showed significantly higher RSB than sexual minority women and heterosexual people. Again, sexual minority women have significantly higher RSB when compared to heterosexual women. These results are in line with the growing body of literature showing that RSB are more prevalent among sexual minority people than heterosexual people (Blake et al., 2001; Tornello et al., 2014). However, being a sexual minority man appeared the strongest risk factor for developing RSB. (Szymanski et al., 2008). In Western countries, sexual minority men are exposed to greater pressure to conform to a heteronormative gender role, which might entail more actively seeking and engaging in sexual activity with multiple and/or casual partners (Baiocco & Pistella, 2019; Baiocco et al., 2018; D’Augelli & Grossman, 2001; Vaughan & Rodriguez, 2014).

Limitations and Conclusion

The following limitations must be considered in interpreting our findings. First, we utilized cross-sectional data; future studies might adopt the longitudinal design to more directly examine the impact of baseline trait self-criticism on subsequent emergence of RSB, testing for sexual identity and gender differences. Second, the present study focuses on individual variables. Therefore, we should consider the necessity to understand further the possible interactive effects of contextual factors (such as connectedness to the LGBT + community, victimization experiences, family support) and psychological processes on risk-taking in sexual behaviors.

Despite these limitations, to our knowledge, this is the first study to investigate sexual orientation disparities on the relationship between self-criticism dimensions and RSB. As hypothesized, increased RSB in sexual minority people is strongly predicted by the tendency towards self-hate, highlighting the usefulness of developing, implementing, and testing compassion-focused interventions to target self-hate in sexual minority people to reduce the occurrence of RSB. Indeed, a compassion-focused therapy program for sexual minority young adults with depressive symptomatology has already been proposed to help people access and cultivate care-focused motives and emotions to address issues of shame and self-criticism and build supportive inner resources (Pepping et al., 2017). Furthermore, activating a compassionate mindset represent a strong mechanism that could lead to diverse positive psychosocial outcomes, such as increased self-esteem (Pepping et al., 2013) and more positive interpersonal relationships (Pepping et al., 2016). Thus, this is particularly relevant for the treatment of sexual minority people, which must face both inner and external stimulators of the threat system, which exacerbate and maintain emotional suffering.

Funding Open access funding provided by Università degli Studi di Roma La Sapienza within the CRUI-CARE Agreement.

Availability of Data and Material The data are available upon request to the authors.

Declarations

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of Interest The authors declare no competing interests.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Allen, K. J. D., Fox, K. R., Schatten, H. T., & Hooley, J. M. (2019). Frequency of non-suicidal self-injury is associated with impulsive decision-making during criticism. *Psychiatry Research*, 271, 68–75. <https://doi-org.jerome.stjohns.edu/10.1016/j.psychres.2018.11.022>
- Bailey, J. V., Farquhar, C., Owen, C., & Whittaker, D. (2003). Sexual behaviour of lesbians and bisexual women. *Sexually Transmitted Infections*, 79(2), 147–150. <https://doi.org/10.1136/sti.79.2.147>
- Baiocco, R., D'Alessio, M., & Laghi, F. (2010). Binge drinking among gay and lesbian youths: The role of internalized sexual stigma, self-disclosure, and individuals' sense of connectedness to the gay community. *Addictive Behaviors*, 35(10), 896–899. <https://doi.org/10.1016/j.addbeh.2010.06.004>
- Baiocco, R., Ioverno, S., Lonigro, A., Baumgartner, E., & Laghi, F. (2015). Suicidal ideation among Italian and Spanish young adults: The role of sexual orientation. *Archives of Suicide Research*, 19(1), 75–88. <https://doi.org/10.1080/13811118.2013.833150>
- Baiocco, R., Laghi, F., Di Pomponio, I., & Nigito, C. S. (2012). Self-disclosure to the best friend: friendship quality and internalized sexual stigma in Italian lesbian and gay adolescents. *Journal of Adolescence*, 35(2), 381–387. <https://doi.org/10.1016/j.adolescence.2011.08.002>
- Baiocco, R., & Pistella, J. (2019). "Be as You Are" clinical research center at the Sapienza University of Rome. *Journal of Gay & Lesbian Mental Health*, 23(4), 376–379. <https://doi.org/10.1080/19359705.2019.1644572>
- Baiocco, R., Pistella, J., Salvati, M., Ioverno, S., & Lucidi, F. (2018). Sports as a risk environment: Homophobia and bullying in a sample of gay and heterosexual men. *Journal of Gay & Lesbian Mental Health*, 22(4), 385–411. <https://doi.org/10.1080/19359705.2018.1489325>
- Blake, S. M., Ledsy, R., Lehman, T., Goodenow, C., Sawyer, R., & Hack, T. (2001). Preventing sexual risk behaviors among gay, lesbian, and bisexual adolescents: The benefits of gay-sensitive HIV instruction in schools. *American Journal of Public Health*, 91, 940–946. <https://doi.org/10.2105/AJPH.91.6.940>
- Bridge, L., Smith, P., & Rimes, K. A. (2019). Sexual orientation differences in the self-esteem of men and women: A systematic review and meta-analysis. *Psychology of Sexual Orientation and Gender Diversity*, 6(4), 433–446. <https://doi.org/10.1037/sgd0000342>
- Castilho, P., Pinto-Gouveia, J., & Duarte, J. (2017). Two forms of self-criticism mediate differently the shame–psychopathological symptoms link. *Psychology and Psychotherapy: Theory, Research and Practice*, 90(1), 44–54. <https://doi.org/10.1111/papt.12094>
- Chawla, N., & Sarkar, S. (2019). Defining "high-risk sexual behavior" in the context of substance use. *Journal of Psychosexual Health*, 1(1), 26–31. <https://doi.org/10.1177/2631831818822015>
- Colonnello, V., Petrocchi, N., Farinelli, M., & Ottaviani, C. (2017). Positive social interactions in a lifespan perspective with a focus on opioidergic and oxytocinergic systems: Implications for neuroprotection. *Current Neuropharmacology*, 15, 543–561. <https://doi.org/10.2174/1570159X14666160816120209>
- Crepaz, N., & Marks, G. (2001). Are negative affective states associated with HIV sexual risk behaviors? A Meta-Analytic Review. *Health Psychology*, 20(4), 291–299. <https://doi.org/10.1037/0278-6133.20.4.291>
- D'Augelli, A. R., & Grossman, A. H. (2001). Disclosure of sexual orientation, victimization, and mental health among lesbian, gay, and bisexual older adults. *Journal of Interpersonal Violence*, 16(10), 1008–1027. <https://doi.org/10.1177/088626001016010003>
- Depue, R. A., & Morrone-Strupinsky, J. V. (2005). A neurobehavioral model of affiliative bonding: Implications for conceptualizing a human trait of affiliation. *Behavioral and Brain Sciences*, 28(3), 313–395. <https://doiorg.jerome.stjohns.edu/10.1017/S0140525X05000063>
- Dermody, S. S., Friedman, M., Chisolm, D. J., Burton, C. M., & Marshal, M. P. (2020). Elevated risky sexual behaviors among sexual minority girls: indirect risk pathways through peer victimization and heavy drinking. *Journal of Interpersonal Violence*, 35(11–12), 2236–2253. <https://doi.org/10.1177/0886260517701450>
- Diamond, L. M., & Lucas, S. (2004). Sexual-minority and heterosexual youths' peer relationships: Experiences, expectations, and implications for well-being. *Journal of Research on Adolescence*, 14(3), 313–340. <https://doi.org/10.1111/j.1532-7795.2004.00077.x>
- Diamond, L. M., & Wallen, K. (2011). Sexual minority women's sexual motivation around the time of ovulation. *Archives of Sexual Behavior*, 40, 237–246. <https://doi.org/10.1007/s10508-010-9631-2>
- Efrati, Y., & Gola, M. (2019). The effect of early life trauma on compulsive sexual behavior among members of a 12-step group. *The Journal of Sexual Medicine*, 16(6), 803–811. <https://doi.org/10.1016/j.jsxm.2019.03.272>
- Everett, B. G., Schnarrs, P. W., Rosario, M., Garofalo, R., & Mustanski, B. (2014). Sexual orientation disparities in sexually transmitted infection risk behaviors and risk determinants among sexually active adolescent males: Results from a school-based sample. *American Journal of Public Health*, 104, 1107–1112. <https://doi.org/10.2105/AJPH.2013.301759>
- Fredlund, C., Svedin, C. G., Priebe, G., Jonsson, L., & Wadsby, M. (2017). Self-reported frequency of sex as self-injury (SASI) in a national study of Swedish adolescents and association to sociodemographic factors, sexual behaviors, abuse, and mental health. *Child and Adolescent Psychiatry and Mental Health*, 11(1), 1–11. <https://doi.org/10.1186/s13034-017-0146-7>
- Fredlund, C., Wadsby, M., & Jonsson, L. S. (2020). Motives and manifestations of sex as self-injury. *The Journal of Sex Research*, 57(7), 897–905. <https://doi.org/10.1080/00224499.2019.1689377>

- Fromme, K., Katz, E. C., & Rivet, K. (1997). Outcome expectancies and risk-taking behavior. *Cognitive Therapy and Research*, 21(4), 421–442. <https://doi.org/10.1023/A:1021932326716>
- Frost, D. M., LeBlanc, A. J., de Vries, B., Alston-Stepnitz, E., Stephenson, R., & Woodyatt, C. (2017). Couple-level minority stress: An examination of same-sex couples' unique experiences. *Journal of Health and Social Behavior*, 58(4), 455–472. <https://doi.org/10.1177/0022146517736754>
- Gilbert, P., Baldwin, M. W., Irons, C., Baccus, J. R., & Palmer, M. (2006). Self criticism and self-warmth: An imagery study exploring their relation to depression. *Journal of Cognitive Psychotherapy*, 20(2), 183–200. <https://doi.org/10.1891/jcop.20.2.183>
- Gilbert, P., Clark, M., Hempel, S., Miles, J. N. V., & Irons, C. (2004). Criticizing and reassuring oneself: An exploration of forms, styles and reasons in female students. *British Journal of Clinical Psychology*, 43(1), 31–50. <https://doi.org/10.1348/014466504772812959>
- Gilbert, P., McEwan, K., Gibbons, L., Chotai, S., Duarte, J., & Matos, M. (2012). Fears of compassion and happiness in relation to alexithymia, mindfulness and self-criticism. *Psychology and Psychotherapy: Theory, Research and Practice*, 85(4), 374–390. <https://doi.org/10.1111/j.2044-8341.2011.02046.x>
- Gilbert, P., McEwan, K., Mitra, R., Franks, L., Richter, A., & Rockliff, H. (2008). Feeling safe and content: A specific affect regulation system? Relationship to depression, anxiety, stress, and self-criticism. *The Journal of Positive Psychology*, 3(3), 182–191. <https://doi.org/10.1080/17439760801999461>
- Glick, S. N., Morris, M., Foxman, B., Aral, S. O., Manhart, L. E., Holmes, K. K., & Golden, M. R. (2012). A comparison of sexual behavior patterns among men who have sex with men and heterosexual men and women. *Journal of Acquired Immune Deficiency Syndromes*, 60, 83–90. <https://doi.org/10.1097/QAI.0b013e318247925e>
- Goodenow, C., Szalacha, L. A., Robin, L. E., & Westheimer, K. (2008). Dimensions of sexual orientation and HIV-related risk among adolescent females: Evidence from a statewide survey. *American Journal of Public Health*, 98(6), 1051–1058. <https://doi.org/10.2105/AJPH.2005.080531>
- Greene, D. C., & Britton, P. J. (2015). Predicting adult LGBTQ happiness: Impact of childhood affirmation, self-compassion, and personal mastery. *Journal of LGBT Issues in Counseling*, 9(3), 158–179. <https://doi.org/10.1080/15538605.2015.1068143>
- Hatzenbuehler, M. L., & Pachankis, J. E. (2016). Stigma and minority stress as social determinants of health among lesbian, gay, bisexual, and transgender youth: research evidence and clinical implications. *Pediatric Clinics*, 63(6), 985–997. <https://doi.org/10.1016/j.pcl.2016.07.003>
- Hayes, A. F. (2013). *PROCESS SPSS Macro [Computer software and manual]*. Retrieved from <http://afhayes.com/introduction-to-mediation-moderation-and-conditional-process-analysis.html> Google Scholar, 59-71
- Herek, G. M., Gillis, J. R., & Cogan, J. C. (2009). Internalized stigma among sexual minority adults: Insights from a social psychological perspective. *Journal of Counseling Psychology*, 56(1), 32–43. <https://doi.org/10.1037/a0014672>
- Jonsson, L. S., Svedin, C. G., Priebe, G., Fredlund, C., Wadsby, M., & Zetterqvist, M. (2019). Similarities and differences in the functions of non-suicidal self-injury (NSSI) and sex as self-injury (SASI). *Suicide and Life-Threatening Behavior*, 49(1), 120–136. <https://doi.org/10.1111/sltb.12417>
- Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Queen, B., ... & Ethier, K. A. (2018). *Youth risk behavior surveillance—United States, 2017*. MMRW Surveillance Summaries, 67(8), 1–114. <https://doi.org/10.15585/mmwr.ss6708a1>
- Kanovský, M., Halamová, J., Zuroff, D. C., Troop, N. A., Gilbert, P., ... & Kupeli, N. (2020). A multilevel multidimensional finite mixture item response model to cluster respondents and countries: The Forms of Self-Criticising/Attacking and Self-Reassuring Scale. *European Journal of Psychological Assessment*. Advance online publication. <https://doi.org/10.1027/1015-5759/a000631>
- Kaplan, M. S., & Krueger, R. B. (2010). Diagnosis, assessment, and treatment of hypersexuality. *Journal of Sex Research*, 47(2–3), 181–198. <https://doi.org/10.1080/00224491003592863>
- King, M., Semlyen, J., Tai, S. S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay, and bisexual people. *BMC Psychiatry*, 8(1), 1–17. <https://doi.org/10.1186/1471-244X-8-70>
- Kort, J. (2004). Covert cultural sexual abuse of gay male teenagers contributing to etiology of sexual addiction. *Sexual Addiction & Compulsivity*, 11(4), 287–300. <https://doi.org/10.1080/10720160490900632>
- Krueger, R. F., & Eaton, N. R. (2015). Transdiagnostic factors of mental disorders. *World Psychiatry*, 14(1), 27–29. <https://doi.org/10.1002/wps.20175>
- Lingiardi, V., Baiocco, R., & Nardelli, N. (2012). Measure of internalized sexual stigma for lesbians and gay men: A new scale. *Journal of Homosexuality*, 59(8), 1191–1210. <https://doi.org/10.1080/00918369.2012.712850>
- Longe, O., Maratos, F. A., Gilbert, P., Evans, G., Volker, F., Rockliff, H., & Rippon, G. (2010). Having a word with yourself: Neural correlates of self-criticism and self-reassurance. *NeuroImage*, 49(2), 1849–1856. <https://doi.org/10.1016/j.neuroimage.2009.09.019>
- Lowry, R., Dunville, R., Robin, L., & Kann, L. (2017). Early sexual debut and associated risk behaviors among sexual minority youth. *American Journal of Preventive Medicine*, 52(3), 379–384. <https://doi.org/10.1016/j.amepre.2016.10.008>
- Marraccini, M. E., Brick, L. A., Weyandt, L. L., Francis, A., Clarkin, C., & Fang, Y. (2019). Effects of self-injurious thoughts and behaviors and sexual risk-taking behaviors through emotional control. *Journal of Affective Disorders*, 249, 183–191. <https://doi.org/10.1016/j.jad.2019.01.04>
- Matos, M., Carvalho, S. A., Cunha, M., Galhardo, A., & Sepodes, C. (2017). Psychological flexibility and self-compassion in gay and heterosexual men: How they relate to childhood memories, shame, and depressive symptoms. *Journal of LGBT Issues in Counseling*, 11(2), 88–105. <https://doi.org/10.1080/15538605.2017.1310007>
- McDermott, E., Roen, K., & Scourfield, J. (2008). Avoiding shame: Young LGBT people, homophobia and self-destructive behaviours. *Culture, Health & Sexuality*, 10(8), 815–829. <https://doi.org/10.1080/13691050802380974>
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, 129, 647–697. <https://doi.org/10.3700/332909.129.5.674>
- Mthembu, Z., Maharaj, P., & Rademeyer, S. (2019). “I am aware of the risks, I am not changing my behaviour”: risky sexual behaviour of university students in a high-HIV context. *African Journal of AIDS Research*, 18(3), 244–253. <https://doi.org/10.2989/16085906.2019.1655075>
- Muehlenkamp, J. J. (2005). Self-injurious behavior as a separate clinical syndrome. *American Journal of Orthopsychiatry*, 75(2), 324–333. <https://doi.org/10.1037/0002-9432.75.2.324>
- Muris, P., & Petrocchi, N. (2017). Protection or vulnerability? A meta-analysis of the relations between the positive and negative components of self-compassion and psychopathology. *Clinical Psychology & Psychotherapy*, 24(2), 373–383. <https://doi.org/10.1002/cpp.2005>
- Mustanski, B. S., Newcomb, M. E., DuBois, S. N., Garcia, S. C., & Grov, C. (2011). HIV in young men who have sex with men: A review of epidemiology, risk and protective factors, and interventions. *Journal of Sex Research*, 48, 218–253. <https://doi.org/10.1080/00224499.2011.558645>
- Nardelli, N., Baiocco, R., Tanzilli, A., & Lingardi, V. (2020). Not in the same mental drawer: Internalized sexual stigma, dissociation,

- and the role of religion in a sample of Italian gay men. *Journal of Homosexuality*, 67(10), 1386–1400. <https://doi-org.jerome.stjohns.edu/10.1080/00918369.2019.1591786>
- Newcomb, M. E., & Mustanski, B. (2010). Internalized homophobia and internalizing mental health problems: A meta-analytic review. *Clinical Psychology Review*, 30(8), 1019–1029. <https://doi.org/10.1016/j.cpr.2010.07.003>
- Nock, M. K. (2010). Self-injury. *Annual Review of Clinical Psychology*, 6, 339–363. <https://doi.org/10.1146/annurev.clinpsy.121208.131258>
- Oginni, O. A., Jern, P., & Rijdsdijk, F. V. (2020). Mental health disparities mediating increased risky sexual behavior in sexual minorities: A Twin Approach. *Archives of Sexual Behavior*, 49(7), 2497–2510. <https://doi.org/10.1007/s10508-020-01696-w>
- Panksepp, J. (2007). The neuroevolutionary and neuroaffective psychobiology of the prosocial brain. In R.I.M. Dunbar, & L. Barrett (Eds.), *The Oxford Handbook of Evolutionary Psychology*. Oxford University Press.
- Parsons, J. T., Grov, C., & Golub, S. A. (2012). Sexual compulsivity, co-occurring psychosocial health problems, and HIV risk among gay and bisexual men: Further evidence of a syndemic. *American Journal of Public Health*, 102(1), 156–162. <https://doi.org/10.2105/AJPH.2011.300284>
- Parsons, J. T., Millar, B. M., Moody, R. L., Starks, T. J., Rendina, H. J., & Grov, C. (2017). Syndemic conditions and HIV transmission risk behavior among HIV-negative gay and bisexual men in a U.S. national sample. *Health Psychology*, 36(7), 695–703. <https://doi.org/10.1037/hea0000509>
- Pepping, C. A., & Halford, W. K. (2016). Mindfulness and couple relationships. In *Mindfulness and Buddhist-derived approaches in mental health and addiction* (pp. 391–411). Springer, Cham.
- Pepping, C. A., Lyons, A., McNair, R., Kirby, J. N., Petrocchi, N., & Gilbert, P. (2017). A tailored compassion-focused therapy program for sexual minority young adults with depressive symptomatology: Study protocol for a randomized controlled trial. *BMC Psychology*, 5. <https://doi-org.jerome.stjohns.edu/10.1186/s40359-017-0175-2>
- Pepping, C. A., O'Donovan, A., & Davis, P. J. (2013). The positive effects of mindfulness on self-esteem. *The Journal of Positive Psychology*, 8(5), 376–386. <https://doi.org/10.1080/17439760.2013.807353>
- Petrocchi, N., Dentale, F., & Gilbert, P. (2019). Self-reassurance, not self-esteem, serves as a buffer between self-criticism and depressive symptoms. *Psychology & Psychotherapy: Theory, Research & Practice*, 92(3), 394–406. <https://doi-org.jerome.stjohns.edu/10.1111/papt.12186>
- Petrocchi, N., Ottaviani, C., & Couyoumdjian, A. (2017). Compassion at the mirror: Exposure to a mirror increases the efficacy of a self-compassion manipulation in enhancing soothing positive affect and heart rate variability. *The Journal of Positive Psychology*, 12, 525–536. <https://doi.org/10.1080/17439760.2016.1209544>
- Petrocchi, N., Pistella, J., Salvati, M., Carone, N., Laghi, F., & Baiocco, R. (2020). I embrace my LGB identity: Self-reassurance, social safeness, and the distinctive relevance of authenticity to well-being in Italian lesbians, gay men, and bisexual people. *Sexuality Research and Social Policy*, 17(1), 75–86. <https://doi.org/10.1007/s13178-018-0373-6>
- Plöderl, M., & Tremblay, P. (2015). Mental health of sexual minorities: A systematic review. *International Review of Psychiatry*, 27, 367–385. <https://doi.org/10.3109/09540261.2015.1083949>
- Porges, S. W. (2007). The polyvagal perspective. *Biological Psychology*, 74, 116–143. <https://doi.org/10.1016/j.biopsycho.2006.06.009>
- Potard, C., Lancelot, C., & Courtois, R. (2019). Examining relationships between sexual risk–safety behaviors and physical self-concept by gender: A cluster analytical approach. *Emerging Adulthood*, 7(1), 31–44. <https://doi.org/10.1177/2167696817750802>
- Potat, V. P., Russell, S. T., & Dewaele, A. (2019). Sexual health risk behavior disparities among male and female adolescents using identity and behavior indicators of sexual orientation. *Archives of Sexual Behavior*, 48(4), 1087–1097. <https://doi.org/10.1007/s10508-017-1082-6>
- Puckett, J. A., Levitt, H. M., Horne, S. G., & Hayes-Skelton, S. A. (2015). Internalized heterosexism and psychological distress: The mediating roles of self-criticism and community connectedness. *Psychology of Sexual Orientation and Gender Diversity*, 2(4), 426–435. <https://doi.org/10.1037/sgd0000123>
- Reid, R. C. (2010). Differentiating emotions in a sample of men in treatment for hypersexual behavior. *Journal of Social Work Practice in the Addictions*, 10(2), 197–213. <https://doi.org/10.1080/15332561003769369>
- Reid, R. C., Harper, J. M., & Anderson, E. H. (2009). Coping strategies used by hypersexual patients to defend against the painful effects of shame. *Clinical Psychology & Psychotherapy: an International Journal of Theory & Practice*, 16(2), 125–138. <https://doi.org/10.1002/cpp.609>
- Riggle, E. D. B., Mohr, J., Rostosky, S., Fingerhut, A., & Balsam, K. (2014). A multifactor Lesbian, Gay, and Bisexual Positive Identity Measure (LGB-PIM). *Psychology of Sexual Orientation and Gender Diversity*, 1(4), 398–411. <https://doi.org/10.1037/sgd0000057>
- Russell, S. T., & Horn, S. S. (2016). *Sexual orientation, gender identity, and schooling: The nexus of research, practice, and policy*. Oxford University Press.
- Salvati, M., Ioverno, S., Giacomantonio, M., & Baiocco, R. (2016). Attitude toward gay men in an Italian sample: Masculinity and sexual orientation make a difference. *Sexuality Research and Social Policy*, 13(2), 109–118. <https://doi.org/10.1007/s13178-016-0218-0>
- Scheer, J. R., & Antebi-Gruszka, N. (2019). A Psychosocial Risk Model of Potentially Traumatic Events and Sexual Risk Behavior Among LGBTQ Individuals. *Journal of Trauma & Dissociation*, 20(5), 603–618. <https://doi.org/10.1080/15299732.2019.1597815>
- Schmitt, D. P. (2004). The Big Five related to risky sexual behaviour across 10 world regions: Differential personality associations of sexual promiscuity and relationship infidelity. *European Journal of Personality*, 18(4), 301–319. <https://doi.org/10.1002/per.520>
- Schuster, R. M., Mermelstein, R., & Wakschlag, L. (2013). Gender-specific relationships between depressive symptoms, marijuana use, parental communication and risky sexual behavior in adolescence. *Journal of Youth and Adolescence*, 42(8), 1194–1209. <https://doi.org/10.1007/s10964-012-9809-0>
- Schwartz, M. F., & Brasted, W. S. (1985). Sexual addiction: Self-hate, guilt, and passive rage contribute to this deviant behavior. *Medical Aspects of Human Sexuality*, 19(10), 103–107.
- Schwartz, S. J., Unger, J. B., Des Rosiers, S. E., Huang, S., Baezconde-Garbanati, L., Lorenzo-Blanco, E. I., Villamar, J. A., Soto, D. W., Patarroyo, M., Szapocznika, J., & Szapocznik, J. (2012). Substance use and sexual behavior among recent Hispanic immigrant adolescents: Effects of parent–adolescent differential acculturation and communication. *Drug and Alcohol Dependence*, 125, S26–S34. <https://doi.org/10.1016/j.drugalcdep.2012.05.020>
- Smith, D. M., Fox, K. R., Carter, M. L., Thoma, B. C., & Hooley, J. M. (2020a). Emotional changes following discrimination induction in gender- and sexuality-diverse adolescents. *Emotion*. Advance online publication. <https://doi.org/10.1037/emo0000862>.
- Smith, D. M., Wang, S. B., Carter, M. L., Fox, K. R., & Hooley, J. M. (2020b). Longitudinal predictors of self-injurious thoughts and behaviors in sexual and gender minority adolescents. *Journal of Abnormal Psychology*, 129(1), 114–121. <https://doi-org.jerome.stjohns.edu/10.1037/abn0000483>
- Sommers-Spijkerman, M., Trompetter, H., ten Klooster, P., Schreurs, K., Gilbert, P., & Bohlmeijer, E. (2017). Development and validation of the forms of Self-Criticizing/Attacking and Self-Reassuring Scale—Short Form. *Psychological Assessment*, 30(6), 729–743. <https://doi.org/10.1037/pas0000514>

- St. Germain, S. A. S., & Hooley, J. M. (2012). Direct and indirect forms of non-suicidal self-injury: Evidence for a distinction. *Psychiatry Research, 197*(1–2), 78–84. <https://doi.org/10.1016/j.psychres.2011.12.050>.
- Stief, M. C., Rieger, G., & Savin-Williams, R. C. (2014). Bisexuality is associated with elevated sexual sensation seeking, sexual curiosity, and sexual excitability. *Personality and Individual Differences, 66*, 193–198. <https://doi.org/10.1016/j.paid.2014.03.035>
- Szymanski, D. M., & Ikizler, A. S. (2013). Internalized heterosexism as a mediator in the relationship between gender role conflict, heterosexist discrimination, and depression among sexual minority men. *Psychology of Men & Masculinity, 14*(2), 211–219. <https://doi.org/10.1037/a0027787>
- Szymanski, D. M., Kashubeck-West, S., & Meyer, J. (2008). Internalized heterosexism: Measurement, psychosocial correlates, and research directions. *The Counseling Psychologist, 36*, 525–574. <https://doi.org/10.1177/0011000007309489>
- Tat, S. A., Marrazzo, J. M., & Graham, S. M. (2015). Women who have sex with women living in low-and middle-income countries: A systematic review of sexual health and risk behaviors. *LGBT Health, 2*(2), 91–104. <https://doi.org/10.1089/lgbt.2014.0124>
- Tornello, S. L., Riskind, R. G., & Patterson, C. J. (2014). Sexual orientation and sexual and reproductive health among adolescent young women in the United States. *Journal of Adolescent Health, 54*, 160–168. <https://doi.org/10.1016/j.jadohealth.2013.08.018>
- Vasilenko, S. A., Kugler, K. C., Butera, N. M., & Lanza, S. T. (2015). Patterns of adolescent sexual behavior predicting young adult sexually transmitted infections: A latent class analysis approach. *Archives of Sexual Behavior, 44*(3), 705–715. <https://doi.org/10.1007/s10508-014-0258-6>
- Vaughan, M. D., & Rodriguez, E. M. (2014). LGBT strengths: Incorporating positive psychology into theory, research, training, and practice. *Psychology of Sexual Orientation and Gender Diversity, 1*(4), 325–334. <https://doi.org/10.1037/sgd0000053>
- Weatherburn, P., Hickson, F., Reid, D. S., Marcus, U., & Schmidt, A. J. (2019). European Men-who-have-sex-with-men Internet Survey (EMIS-2017): Design and methods. *Sexuality Research and Social Policy, 17*, 543–557. <https://doi.org/10.1007/s13178-019-00413-0>
- Werner, A. M., Tibubos, A. N., Rohrmann, S., & Reiss, N. (2019). The clinical trait self-criticism and its relation to psychopathology: A systematic review–Update. *Journal of Affective Disorders, 246*, 530–547. <https://doi.org/10.1016/j.jad.2018.12.069>
- Whelton, W. J., & Greenberg, L. S. (2005). Emotion in self-criticism. *Personality and Individual Differences, 38*(7), 1583–1595. <https://doi.org/10.1016/j.paid.2004.09.024>
- World Health Organization. (2018). *Sexually Transmitted Diseases*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs110/en/index.html>. Accessed 11 July 2018.
- Zelkowitz, R. L., & Cole, D. A. (2019). Self-criticism as a transdiagnostic process in non-suicidal self-injury and disordered eating: Systematic review and meta-analysis. *Suicide and Life-Threatening Behavior, 49*(1), 310–327. <https://doi-org.jerome.stjohns.edu/10.1111/sltb.12436>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.