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Homophobia is online: Sexual victimization and risks on the internet and mental health among bisexual, homosexual, pansexual, asexual, and queer adolescents

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ABSTRACT

The first aim of this study was to analyze the prevalence and frequency of different forms of online sexual victimization and risks among sexual minorities, including sexting, sexual orientation- and gender-based victimization, unwanted sexual attention, sextortion, and revenge porn. The second aim was to examine whether online sexual victimization and risks mediate the relationship between being a sexual minority and mental health outcomes, including depression and anxiety. The sample was composed of 1779 adolescents (50.9% girls) between 12 and 18 years old (mean age = 13.92, SD = 1.27), and 146 of them (8.2%) were sexual minorities (specifically, bisexual, homosexual, pansexual, asexual, or queer adolescents). About 17.3% of sexual minority adolescents have sent a sext. Four out of ten adolescents (41.1%) had experienced online sexual orientation discrimination and 28.4% gender-based victimization. More than forty percent (45.2%) experienced unwanted sexual attention, 9% were victims of sextortion, and 5.5% had been targets of revenge porn. Sexting, online sexual orientation victimization and gender-based victimization, and unwanted sexual attention partially mediated the relationship between being a sexual minority and mental health outcomes (i.e., depression and anxiety). More prevention programs aimed to reduce online sexual victimization and risks for sexual minorities are needed.

1. Introduction

The internet has revolutionized the manner in which we create new social relationships by allowing us to increase communication with others, to maintain interpersonal contact, and to generate online social support groups, especially among adolescents (Wu et al., 2016). Despite its multiple benefits at the social level, the internet also carries a greater probability of online sexual victimization and risks (OSVR). OSVR includes sending sexual content (i.e., sexting; Cooper et al., 2016; Krieger, 2017) and forms of sexual victimization, such as online gender victimization (Henry & Powell, 2018), unwanted sexual attention (Barak, 2005), sexual coercion or "sextortion" (Patchin & Hinduja, 2020b; Wolak et al., 2018), and the dissemination of sexually explicit images to harm someone, often referred to as "revenge porn" (Walker & Sleath, 2017). Research to date has been devoted to these problems among heterosexual youth (Henry & Powell, 2018); however, considerably less information is available on OSVR among sexual minority youth.

Sexual minorities often make greater use of the internet as a result of

looking for specific socialization environments in which they can meet other people with the same sexual orientation or can avoid face-to-face social rejection and homophobic bullying (Hillier et al., 2012; Ybarra & Mitchell, 2016). Paradoxically, this greater use of the internet to escape offline discrimination could lead to greater exposure to OSVR (Ybarra & Mitchell, 2016). The internet is an environment that reproduces societal prejudices, so it is reasonable to think that homophobia and discrimination will also be present online, causing higher rates of OSVR among sexual minorities (Priebe & Svedin, 2012). In turn, the higher rate of OSVR could partially explain the higher rate of negative mental health outcomes found among sexual minorities. To date, however, little is known about the role OSVR plays in the mental health of sexual minorities; therefore, the objective of the present study was to analyze the presence of different OSVR among adolescents of sexual minorities compared to heterosexuals, as well as the relationship between OSVR and mental health outcomes (i.e., depression and anxiety). In the following sections, we review the empirical and theoretical background to justify the aims of this study.

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1.1. Sexting among sexual minorities

"Sexting" refers to the self-generation and exchange of online sexual content, which can include photos, videos, or written messages (Barrense-Dias et al., 2017; Clancy et al., 2019; Mitchell et al., 2012; Morelli et al., 2020). Although sending either sexual images or explicit sexual messages could have different legal consequences (Ngo et al., 2017), both forms of sexting tend to co-occur and have been studied together (e. g., Gámez-Guadix & Mateos-Pérez, 2019; Morelli et al., 2020). During the last decade, sexting has become a frequent behavior among 15% of adolescents (Klettke et al., 2014; Madigan et al., 2018). Sexting can have important developmental functions, such as the exploration of sexuality, promotion of intimacy by the couple, or communication between sexual minorities (Morelli et al., 2020). Sexting, however, has also been associated with risks during adolescence such as higher rates of sexual activity, higher online victimization, or psychological distress (e.g. Choi et al., 2019; Del Rey et al., 2019).

According to the available empirical evidence, sexting is more frequent among sexual minorities than among heterosexuals. Rice et al. (2012) found that nonheterosexual teens were more likely to report participating in sexting. Ybarra and Mitchell (2016) reported that a significantly higher proportion of adolescents with a nonheterosexual orientation were involved in online sexual conversations and sharing sexual pictures of oneself compared to heterosexual youth. Similarly, Morelli et al. (2016) found that sexual minority adolescents participated more frequently in sexting than did heterosexuals. Gámez-Guadix et al. (2017) observed that sexual minority orientation was associated with a greater involvement in sexting, including sending sexual written content, photos, and videos. Van Ouytsel et al. (2019) found that 12.3% of sexual minority teens compared to 6.8% of heterosexual teens have sent a sexual picture of themselves to someone through the internet. More recently, Van Ouytsel et al. (2021) reported that 8.7% of heterosexual and 25% of sexual minority adolescents had sent a sexting image.

There are several reasons why sexual minorities are more involved in sexting (Hillier et al., 2012). For sexual minorities, sexting can be a way to explore their sexual identity and preferences. The number of romantic or sexual partners with a specific sexual orientation is more accessible on the internet. It is also safer for sexual minorities to approach a potential partner on the internet than to do it face-to-face. Sexual minorities might find online the acceptance that is often lacking in the real world. In spite of these benefits, sexting could also be a marker for risky online behavior and negative mental health outcomes, such as depression and anxiety (Madigan et al., 2018; Medrano et al., 2018; Mori et al.,

Although various authors have indicated that sexting is a normative behavior about which adolescents should be educated (Patchin & Hinduja, 2020a), it is necessary to examine the conditions (e.g., being a sexual minority) in which sexting increases the risk of negative mental health outcomes (Medrano et al., 2018; Ybarra & Mitchell, 2016). Little is known, however, about the impact that sexting can have on the mental health of sexual minorities, who are more involved in sexting compared to heterosexuals.

1.2. Online sexual victimization

In recent years, information and communication technologies (ICTs), such as the internet and mobile applications, have become an increasingly frequent channel for perpetrating sexual harassment and violence (Barak, 2005; Henry & Powell, 2018; Powell & Henry, 2016). The absence of time and geographic limits, perceived anonymity through the internet, the indirect nature of online aggression, and the greater likelihood of easily establishing internet contact with unknown people are characteristics that can facilitate cyber aggression as opposed to offline aggression (Smith, 2012).

Barak (2005) identifies three fundamental types of online sexual harassment, which he calls "gender harassment," "unwanted sexual

attention," and "sexual coercion." First, gender-based harassment includes a variety of behaviors related to the victim's gender and sexual orientation, which are intended to produce negative reactions and emotions. The term gender, specifically, "refers to those social, cultural, and psychological traits linked to males and females through particular social contexts" (Lindsey, 2015, p. 4). Thus, gender-based harassment may include assaults motivated by manifesting an appearance, behavior, or role discordant with assigned gender. For example, in the case of a woman, gender-based harassment could include offensive comments for doing traditionally men's activities, being "too masculine," or "being a tomboy." Gender-based harassment may also include offensive or unwelcome jokes, comments, or allusions made to sexual minorities due to their sexual orientation (e.g., "You are not a man, you are a fag") (Powell & Henry, 2016).

Second, unwanted sexual attention refers to unwelcome behaviors that express sexual intentions or desires directed at another person (Barak, 2005). It can occur between people of the same sex or the opposite sex. Unwanted sexual attention may include undesirable questions about sexual activities, sexual organs, or sexual preferences. In a recent study, unwanted sexual attention was found to increase loneliness, depression, and anxiety, and to decrease satisfaction with life among victims (Festl et al., 2019).

Third, sexual coercion or "sextortion" is the use of psychological pressure and threats on a person to obtain their sexual cooperation (Barak, 2005; Henry & Powell, 2018). Sextortion includes threats to reveal the victim's intimate information or videos, hack the victim, threaten to use physical force offline, or distribute intimate information of the victim's family, friends, or acquaintances (Patchin & Hinduja, 2020b; Wolak et al., 2018). Sextortion can be aimed at causing emotional distress or harm to another person. The study carried out by Wolak et al. (2018) indicates that sextortion could increase the risk of negative mental health outcomes. In this regard, these authors found that half of the victims did not report the sextortion incident; most of them were too embarrassed or thought they could get in trouble if they disclosed the incident. In fact, Gassó et al. (2020) found that women who had been threatened by participation in sexting were significantly more likely to suffer anxiety and depression than women who had not been threatened.

Finally, Powell and Henry (2016) add an additional category of victimization called "image-based sexual abuse" or "revenge porn." Revenge porn refers to "the distribution of nude or sexually explicit images of another person without his or her consent" (Powell & Henry, 2016, p. 5). Research has scarcely reported the impact of revenge porn on victims separately from other forms of online sexual victimization (Walker & Sleath, 2017). Among the scarce evidence, Gassó et al. (2020) found that adults who were victims of nonconsensual dissemination of sexual content are significantly more likely to present with depression and anxiety than those who have not been such victims.

The literature on the prevalence and frequency of these forms of online sexual victimization is still scarce, although it has increased in recent years. Montiel et al. (2016) found that 12.2% of adolescents had experienced unwanted sexual attention in the form of repeated requests to participate in sexual activities or give sexual information, and 6.7% reported sexual coercion which involved explicit intimidation as blackmail or threats. Ybarra et al. (2007) found that 15% of adolescents between 10 and 15 years old reported being victims of unwanted sexual solicitations at least once during the past 12 months, and 3% reported victimization once a month or more often. In this study, unwanted sexual solicitation included talking about sex online, being asked sexual information, and being asked to do something sexual online against the victim's will. Sánchez et al. (2017) found that 16% of girls and 18% of boys reported personal sexual cybervictimization, including explicit aggressions (e.g., calling the victim "queer," "homosexual," or "prostitute" on social networks). Kernsmith et al. (2018) found that 12% of teens were coerced to participate in sexting in the last 12 months. A recent study with a nationally representative sample of in the United

States found that 5% of adolescents had been victims of sextortion (Patchin & Hinduja, 2020b). Sexual victimization has also been analyzed in the context of dating relationships among adolescents. For example, Zweig et al. (2013) found that 11% of adolescents had been victims of sexual cyber abuse in a dating relationship; this victimization included pressure to send sexual photos of themselves, receipt of unwanted sexual photos, threats to send sexual photos, and receipt of unwanted text messages seeking sex.

Few studies, however, have examined online sexual victimization among sexual minorities. Among those few studies, Gámez-Guadix et al. (2015) found that, among adults, significantly more homosexuals (71%) and bisexuals (62%) than heterosexuals (35.5%) were victims of online sexual victimization (i.e., a composed measure of insistence, threats, and dissemination of sexual content). Priebe and Svedin (2012) found that the likelihood of others disseminating sexual images were six-fold higher between adolescents of sexual minorities compared to heterosexual adolescents. Patchin and Hinduja (2020b) found that significantly more nonheterosexual adolescents (10.9%) than heterosexual adolescents (4.5%) had been victims of sextortion. More recently, Van Ouvtsel et al. (2021) found that more sexual minority adolescents (37%) than heterosexual adolescents (19.6%) have experienced pressure from someone else to engage in sexting. Although these studies are a valuable starting point, there is a paucity of information on the prevalence and frequency of different types of online sexual victimization among sexual minorities as well as their relationship to mental health outcomes.

1.3. Being a sexual minority and mental health outcomes

A large number of studies have found that sexual minorities experience a worse psychological adjustment compared to the heterosexuals, thus presenting higher rates of mental health problems (Bostwick et al., 2010; Brennan et al., 2010; Hottes et al., 2015; King et al., 2008; Pakula et al., 2016). Among the main psychological disorders found in sexual minorities are higher levels of depression, anxiety, feelings of guilt, self-rejection, isolation, low self-esteem, suicidal ideation, and autolytic attempts (Garaigordobil et al., 2020; Hatzenbuehler, 2017; Hu et al., 2020; Spittlehouse et al., 2019; Williams et al., 2019) compared to the heterosexual population. These results have also been reported in various meta-analyses (Rimes et al., 2019; Schneeberger et al., 2014; Semlyen et al., 2016).

A higher level of mental health disorders in sexual minorities is due to a variety of reasons, including homophobia and discrimination as sources of long-term stress (Hylton et al., 2017; Meyer, 2003; Teasdale & Bradley-Engen, 2010). The "Minority Stress Theory" (Meyer, 2003) provides a theoretical framework within which to understand the psychological disorders of sexual minorities. This theory suggests that sexual minorities are chronically exposed to different stressors (e.g., harassment and victimization, expectations of rejection, prejudice, and the risk of suffering violence) just because they belong to a sexual minority. This stress can considerably affect the mental health and well-being of sexual minorities and could be exacerbated by less social support available to deal with the stressors (Sattler et al., 2016). Thus, it has been found that nonheterosexuals who presented higher levels of victimization reported more depressive symptoms and higher suicide rates (Baams et al., 2015; Burton et al., 2013; Wang et al., 2019). These results support the hypothesis that minority stress, homophobia, and victimization are responsible, in part, for the high rates of depressive symptoms and anxiety among young people.

Furthermore, it has also been pointed out that nonsexual cyberbullying can have negative consequences for sexual minorities. In a recent study, Garaigordobil et al. (2020) found that adolescents with a nonnormative sexual orientation who were victims of cyberbullying had worse psychological adjustment compared to heterosexual adolescents who were also victims. A meta-analysis by Abreu and Kenny (2018) showed that psychological and emotional, behavioral, and academic performance disturbances were associated with the common negative

effects of cyberbullying in nonheterosexual youth. Also, Cooper and Blumenfeld (2012) found that youth belonging to sexual minorities who were victims of cyberbullying were more likely to feel depressed and to experience suicidal thinking, among other symptoms.

1.4. The present study

The preceding review shows the relevance of the different types of OSVR among adolescents. Studies on OSVR have increased among heterosexual adolescents during the last few years; the empirical evidence among sexual minorities, however, is still considerably scarce. The first objective of this study, therefore, was to analyze the prevalence and frequency of different types of OSVR among sexual minorities, and compare them to rates among heterosexual youth. Given that discrimination and homophobia are current societal problems, we hypothesize that sexual minorities will present higher rates of OSVR in terms of both prevalence and frequency.

Previous studies have shown that sexual minorities present more internalizing symptoms (e.g., depression and anxiety) than do heterosexuals; therefore, our second objective is to analyze whether these differences may be partly due to the greater OSVR. In other words, we will analyze whether the relationship between being a sexual minority and mental health outcomes is partially mediated by the higher OSVR. It has been found that adolescents use the internet extensively to establish intimate relationships or as a prelude to sexual relationships (Choi et al., 2019), exposing them, in turn, to more online risk, especially among sexual minorities (Hillier et al., 2012). It is expected, therefore, that OSVR has a significant impact on the mental health of sexual minorities. For this reason, we hypothesize that the relationship between being a sexual minority and mental health outcomes will be partially mediated by greater online sexual victimization.

2. Method

2.1. Participants

The initial study sample was made up of 1801 adolescents. Considering the objectives of this study, 22 adolescents (1.2%) who did not indicate their sexual orientation were excluded. Thus, the final sample was made up of 1779 adolescents between 12 and 18 years old (mean age = 13.92, SD = 1.27). Among them, 906 (50.92%) were women, 861 (48.39%) were men, 8 (0.44%) were non-binary and 4 (0.22%) did not indicate sex. From the entire sample, 146 (8.2%) pertained to a sexual minority: 103 were bisexual, 31 homosexual, nine were asexual, two were pansexual, and one indicated queer/aromantic. The rest of the sample (n = 1633) were heterosexual (91.8%). Mean age did not significantly differ between sexual minority (M = 14.08, SD = 1.22) and heterosexual groups (M = 13.91, SD = 1.28; t = 1.58, ns). The sexual minority group presented a higher proportion of women than the heterosexual group (66% and 50%, respectively; XZ = 13.77, p < .01).

Regarding the place of birth, 1591 participants were born in Spain (89.43%), 127 in Latin-America countries (7.14%), 27 in Asia (1.52%), 16 in other European countries (0.9%), 9 in Africa (0.51%), and 3 in North America (0.17%). There were no differences in places of birth between sexual minorities and heterosexuals. The parents of most of the adolescents were married or living together (71.6%), while 12.7% were divorced, 11.1% were separated, 3% were single parents, and 1.6% were widowed; there were no differences between sexual minorities and heterosexuals (X2 = 9.11, ns).

2.2. Measures

2.2.1. Sexting

We used an adolescent-modified version of three items from the Sexting Questionnaire (Gámez-Guadix et al., 2015) to assess how often teens had sent sexual content online in the past year. We asked teens to

indicate how many times they had done the following things voluntarily: (a) "Send written information or text messages with sexual content about you," (b) "Send pictures with sexual content (e.g., naked) about you," or (c) "Send images (e.g., via webcam) or videos with sexual content about you." The response scale was: 0 = never, 1 = from 1 to 3 = times, 2 = from 4 to 10 = times, and 3 = more than 10 = times. This scale has shown good psychometric properties in samples of adolescents (Gámez-Guadix et al., 2017). Its internal consistency in the present study was 0.75.

2.2.2. Online sexual victimization scales

Considering the absence of previously validated measures to comprehensively assess online sexual victimization among adolescents, we developed a series of scales to assess the interest variables in this study, based on previous conceptualizations of different forms of online sexual victimization (Barak, 2005; Gámez-Guadix et al., 2015; Henry & Powell, 2018; Powell & Henry, 2016). The factorial validity of these scales is examined and presented at the beginning of the Results section. Since the objective of this study focused on discrimination against sexual minorities, we differentiated and measured online gender victimization in two specific ways: victimization based on sexual orientation and victimization based on gender roles and behavior.

Gender-based victimization. We developed a measure consisting of four items with two parallel versions to be answered by girls and boys, respectively: (a) You have been insulted for appearing "too masculine" or doing "boys' things"/"too feminine" or doing "girls' things"; (b) Someone has made fun of you for appearing "too masculine" or doing "boys' things"/"too feminine" or doing "girls' things"; (c) You have been humiliated, belittled or made to feel inferior for appearing "too masculine" or doing "boys' things"/"too feminine" or doing "girls' things"; and (d) You have been discriminated against or have been excluded from any online group, forum, or chat for appearing "too masculine" or doing "boys' things"/"too feminine" or doing "girl things." Participants were asked how many times these situations had happened in the last 12 months using the following response scale: 0 = Never, 1 = 1 or 2 times, 2 = 3 or 4 times, 3 = 5 times or more. The internal consistency (Cronbach's alpha) in the present sample was .88.

Unwanted sexual attention on the internet. We included three items to evaluate unwanted sexual approaches on the internet: (a) Someone has directed sexual comments at you that have made you feel bad; (b) Someone has asked you sexual questions that have made you feel bad; and (c) Someone has insisted that you send sexual photos or videos or answer sexual questions that have made you feel bad. Participants were given the following response alternatives (last 12 months): $0=\mathrm{Never}, 1=1$ or 2 times, 2=3 or 4 times, 3=5 times or more. The internal consistency (Cronbach's alpha) in the present sample was .84.

Sextortion. We developed four items to evaluate the presence of sexual coercion and threats: (a) You have been threatened with showing a sexual image of yourself to another person; (b) You have been threatened with publishing a sexual image of you on the internet; (c) You have been threatened with sending on the internet a sexual image of you; and (d) You have been threatened with telling on the internet some sexual intimacy of you. Participants answered about the frequency during the last 12 months: 0 = Never, 1 = 1 or 2 times, 2 = 3 or 4 times,

3=5 times or more. The internal consistency (Cronbach's alpha) in the present sample was .88.

2.2.3. Mental health outcomes

The depression and anxiety subscales of the Brief Symptom Inventory (BSI; Derogatis & Fitzpatrick, 2004) were used to evaluate mental health outcomes. Participants were required to indicate how frequently they had experienced each symptom (e.g., "Feeling sad" or "Feeling no interest in things") during the past 2 weeks. Each subscale includes six items with a response format that ranges from 1 (not at all) to 5 (extremely). The BSI has demonstrated good psychometric properties in the Spanish population (e.g., Pereda et al., 2007). Confirmatory factor analysis (using robust ML method) of both correlated factors (depression and anxiety) in the present sample showed an acceptable fit to data (CFI = 0.93, NFI = 0.92, NNFI = 0.91, SRMR = 0.044). In this sample, the internal consistency was adequate for both the depression subscale (Cronbach's $\alpha = 0.88$) and the anxiety subscale (Cronbach's $\alpha = 0.87$).

2.3. Procedure

Ten schools in a region of central Spain were randomly selected, including eight public schools and two private schools. The period of data collection was from November 2019 to March 2020. Parents received a letter asking for signed, express consent for their children's participation in the study; 65.05% returned the signed authorization to the researchers allowing their children to participate in the study. This study followed the ethical standards and norms of the Declaration of Helsinki. Student were given a document of informed consent with all the information about the study and treatment of personal data. This document was read and signed by the participants before starting the study and ensured that no individual data would be disclosed to any person, by any means. To promote honesty, adolescents were informed that their participation was voluntary and that responses were confidential. Participants were told that they could choose not to answer questions and that participation in the study could be interrupted at any time for any reason with no consequences. The adolescents completed the questionnaire in their classrooms with a study assistant present. Participants were encouraged to ask questions if they had trouble responding to any of the items. The questionnaire required approximately 30-40 min to complete. After completing the questionnaire, participants were given written information with help resources in the community and the researchers' email contacts. This study is part of a larger research project on online sexual abuse of minors, which was reviewed and approved by the Autonomous University of Madrid Ethic Committee.

3. Results

3.1. Psychometric properties of online sexual victimization scales

As a first step, we analyzed the factorial validity of the measures of online sexual victimization. Exploratory factor analysis (Principal Axis Extraction) with oblique rotation (Oblimin) on the items was used. Software JASP (2020) was used for factor analyses. For factor analyses, 0.40 was established as the minimum saturation for an item to be

considered part of a factor (Field, 2009). Kaiser's measure of sampling adequacy was 0.86. Bartlett's test of sphericity, χ^2 (45) = 10246, p < .001, indicated that correlations between items were sufficiently large for exploratory factor analysis (Field, 2009). Parallel analysis was used to decide the number of factors to retain. Results showed a structure composed of five factors that were congruent with the dimensions of Sextortion (Factor 1), Gender-based victimization (Factor 2), Sexual orientation victimization (Factor 3), Unwanted sexual attention (Factor 4), and Revenge porn (Factor 5). Table 1 shows the factor loadings after rotation. All the items presented factor loadings higher than 0.46 on their respective factors. No cross-loading higher than 0.40 onto multiple factors was found. Explained variance was 16.8%, 15.0%, 12.7%, 11.1%, and 9.7% for the factors of Sextortion, Gender-based victimization, Sexual orientation victimization, Unwanted sexual attention, and Revenge porn, respectively. All the factors together explained 65.3% of the variance.

3.2. Occurrence of online sexual victimization and risks among sexual minorities

First, we analyzed the prevalence of the different forms of OSVR as a

tation was included as a predictor variable (0 = heterosexual; 1 = sexual minorities). Sex and age were included as control variables in all analyses.

The results are presented in Table 2. Odd ratios of 1.68, 3.47, and 6.71 are equivalent to Cohen's small, medium, and large effects sizes, respectively (Chen et al., 2010). Regarding sexting, 17.3% of sexual minority adolescents participated in the sending of sexual content. Four out ten adolescents (41.1%) of sexual minorities were discriminated against online because of their sexual orientation, and more than one in four adolescents (28.4%) experienced discrimination due to their gender roles. More than forty percent (45.2%) experienced unwanted sexual

attention, 9% encountered sextortion, and 5.5% were victims of revenge

porn. Sexual minorities experienced a significantly higher proportion of all forms of online sexual victimization than heterosexuals except

function of being a sexual minority as compared with the prevalence for

heterosexual youth. To compute prevalence, variables were dichoto-

mized (0 = never; 1 = one or more times). We analyzed whether each of

the types of OSVR was more likely to present based on sexual orientation

by calculating the odd ratios along with the level of significance. To this

end, we ran a set of logistic regressions in which the types of OSVR were

dichotomized and included as dependent variables, while sexual orien-

 Table 1

 Results from a factor analysis of the online sexual victimization scales

	M (SD)	Factor	Factor	Factor	Factor	Factor
		1	2	3	4	5
Gender-based victimization ($\alpha = 0.88$)	0.086					
	(0.336)					
You have been insulted for appearing "too masculine" or doing "boys' things"/"too feminine" or doing	0.102	0.027	0.892	0.012	0.019	-0.059
"girls' things."	(0.422)					
Someone has made fun of you for appearing "too masculine" or doing "boys' things"/"too feminine" or	0.125	-0.007	0.844	-0.007	0.024	0.005
doing "girls' things."	(0.473)					
You have been humiliated, belittled or made to feel inferior for appearing "too masculine" or doing "boys"	0.079	-0.018	0.906	-0.034	-0.017	0.062
things"/"too feminine" or doing "girls' things."	(0.382)					
You have been discriminated against or have been excluded from any online group, forum, or chat for	0.031	0.058	0.541	0.154	-0.034	0.001
appearing "too masculine" or doing "boys' things"/"too feminine" or doing "girl things."	(0.252)					
Sexual orientation victimization ($\alpha=0.82$)	0.037					
	(0.192)					
Someone has insulted you because of your sexual orientation.	0.046	0.065	-0.017	0.802	0.029	-0.033
•	(0.271)					
Someone has made fun of you because of your sexual orientation.	0.045	-0.048	-0.000	0.835	0.013	0.055
*	(0.267)					
Someone has humiliated, belittled you or made you feel inferior because of your sexual orientation.	0.038	0.019	-0.008	0.740	-0.022	0.018
	(0.228)					
You have been discriminated against or have been excluded from any online group, forum, or chat	0.019	-0.071	0.136	0.533	-0.026	-0.053
because of your sexual orientation.	(0.180)	0.071	0.100	0.000	0.020	0.000
Unwanted sexual attention ($\alpha = 0.84$)	0.226					
on manifest serial attention (a sign)	(0.531)					
Someone has directed sexual comments at you that have made you feel bad.	0.238	-0.032	0.007	0.018	0.772	0.036
Someone has directed sexual comments at you that have made you reet bad.	(0.624)	-0.032	0.007	0.010	0.772	0.030
Someone has asked you sexual questions that have made you feel bad.	0.226	-0.029	0.019	-0.005	0.901	-0.02
Someone has asked you sexual questions that have made you reel bad.	(0.588)	-0.029	0.019	-0.003	0.901	-0.02
Someone has insisted that you send sexual photos or videos or answer sexual questions that have made	0.214	0.083	-0.021	-0.000	0.718	0.005
you feel bad.	(0.622)	0.063	-0.021	-0.000	0.710	0.003
Sextortion ($\alpha = 0.88$)	0.022)					
Sexiortion ($\alpha = 0.08$)	(0.186)					
You have been threatened with chewing a several image of voyagelf to enother page	0.025	0.905	-0.005	-0.015	0.046	-0.048
You have been threatened with showing a sexual image of yourself to another person.	(0.203)	0.903	-0.003	-0.013	0.040	-0.046
Vou house been three-toned with mublishing a control image of you on the intermet	0.018	0.872	0.026	0.014	-0.078	-0.001
You have been threatened with publishing a sexual image of you on the internet.		0.8/2	0.036	0.014	-0.078	-0.00
Vous hours been three-toned with conding on the intermet a council image of your	(0.172)	0.020	0.002	0.050	0.001	0.100
You have been threatened with sending on the internet a sexual image of you.	0.023	0.839	-0.003	-0.058	0.001	0.128
	(0.200)	0.660	0.016	0.151	0.077	0.00
You have been threatened with telling on the internet some sexual intimacy of you.	0.043	0.668	0.016	0.171	0.077	-0.030
	(0.276)					
Revenge porn ($\alpha = 0.76$)	0.025					
	(0.17)					
Someone has shown another person a sexual image of you (photos or videos) without your consent.	0.044	0.353	-0.014	-0.008	0.101	0.464
	(0.267)					
Someone has published a sexual image of you (photos or videos) on the internet without your consent.	0.009	-0.068	0.003	0.012	-0.010	0.695
	(0.105)					
Someone has forwarded a sexual image of you (photos or videos) without your consent.	0.023	0.026	0.017	0.017	0.006	0.947
	(0.215)					

Note. The extraction method was principal axis factoring with oblimin rotation. Factor loadings above 0.40 are in bold.

Table 2Prevalence (previous year) of OSVR (signification levels controlling for sex and age).

	Sexual minorities n = 146	Heterosexuals n = 1632	Odd ratio	Sign. level
Sexting	17.3%	7.1%	2.99 (1.75–5.13)	<.001
Sexual orientation victimization	41.1%	3%	20.71 (13.13–32.70)	<.001
Gender-based victimization	28.4%	8.8%	3.81 (2.51–5.76)	<.001
Unwanted sexual attention	45.2%	22%	2.56 (1.74–3.75)	<.001
Sextortion	9%	3.4%	2.69 (1.41–5.13)	<.01
Revenge porn	5.5%	3.2%	1.69 (0.77–3.67)	.19

revenge porn, where there were no significant differences. The size of the effect of the differences in the types of gender victimization (i.e., gender roles and sexual orientation victimization) were medium to large. The remaining significant differences between groups approached medium-effect sizes.

We also calculated both the average frequency of OSVR during the last 12 months and chronicity (i.e., the average frequency only among those who had presented with at least one occasion of a given situation; Straus & Ramirez, 2007). For sexting, the scale was recoded as follows: Never = 0 times; 1 to 3 times = 2 times; 4 to 10 times = 7 times; More than 10 times = 11 times. For online sexual victimization, the response scale was recoded as follows: Never = 0 times; 1 to 2 times = 1.5 times; 3 or 4 times = 3.5 times; 5 or more times = 6 times. To analyze differences in frequency, one-way ANOVA including sex and age as control variables was used. Additionally, we computed the partial eta square as a measure of effect size. Following Cohen (2013), partial eta square of 0.01 is small, 0.06 is medium, and 0.14 is a large effect size.

Table 3 shows the mean frequency for each of the OSVR considered. As shown, the mean frequencies for sexual orientation and gender-based victimization, unwanted sexual attention, and revenge porn were significantly higher among sexual minorities than among heterosexuals. Differences in frequency between sexting and sextortion were not significant, but approached significance (p < .10).

Even more interestingly, the chronicity shows the frequency only among those who had been involved in each type of OSVR at least once during the past year. Those who engaged in sexting did so approximately six times in the past year. The chronicity forms of victimization varied between four times for sexual orientation victimization and sextortion and approximately seven times for gender victimization in the previous year. The differences between sexual and heterosexual minorities were

statistically significant for sexual orientation and gender-based victimization and unwanted sexual attention. There were not differences for sextortion and revenge porn. The effect size of the differences was large only for sexual orientation victimization (partial $\eta 2=0.24$). The other differences between sexual minorities and heterosexuals were small.

3.3. Being a sexual minority, OSVR, and mental health outcomes

Finally, we analyze whether the higher OSVR could mediate the relationship between being a sexual minority and mental health outcomes (i.e., symptoms of depression and anxiety). To this end, we estimate a theoretical model in which we hypothesize that being a sexual minority increases the probability of OSVR; this, in turn, increases the probability of symptoms of depression and anxiety. Table 4 presents Spearman's bivariate correlations for all study variables. As shown, being a sexual minority presented significant bivariate correlation with all the types of OSVR considered except Revenge porn. In addition, the bivariate correlations of being a sexual minority with depression or anxiety were also significant (0.20 and 0.16, respectively; p < .001).

We used structural equation modeling to analyze the relationships between being a sexual minority, OSVR, and mental health outcomes. Structural equation modeling was used because it allows simultaneous estimation of the relationships between several mediating and dependent variables, modeling of measurement errors and unexplained variances, and specific fit indices that allow determination of the adequacy of the model (e.g., Byrne, 2013). To analyze the relationship between the variables, EQS 6.1 program was used (Bentler, 1995). We used the robust maximum likelihood (ML) method with the Satorra-Bentler scaled Chi square (S-B χ 2), because the normality assumption was not fulfilled. Goodness of fit was assessed using the normed fit index (NFI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR).

Fig. 1 presents the results of the estimated model. The modification indices provided by EQS recommended addition of the correlation between different model error terms (e.g., sexual orientation victimization and gender-based victimization; depression and anxiety symptoms). Given that these correlations are theoretically sound, we added them to the model (Byrne, 2013). Following Cole and Maxwell (2003), non-standardized coefficients and standard errors are presented. The final model showed satisfactory fit indices [χ 2 (12, N = 1609) = 47.829, NFI = 0.97, CFI = 0.97, SRMR = 0.04, and RMSEA = 0.043 (90% CI 0.031–0.056)].

As displayed in Fig. 1, the direct relationships between being a sexual minority and depression (standardized coefficient $=0.12,\,p<.001)$ and anxiety (standardized coefficient $=0.13,\,p<.001)$ were significant. In other words, identifying as a sexual minority increased the scores for depression and anxiety. The model shown in Fig. 1 also suggests the presence of several indirect relationships between being a sexual minority and mental health outcomes. Table 5 includes the significance of

 Table 3

 Mean frequency and chronicity (previous year) of OSVR as a function of sexual orientation (significance levels controlling for sex and age).

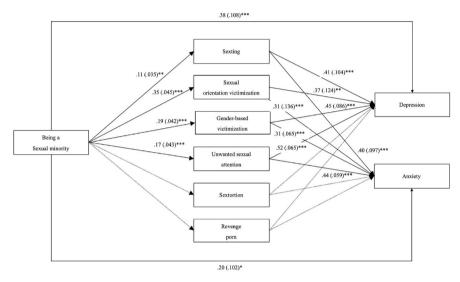
		Sexual minorities $n=146$	$Heteros exuals \ n=1632$	F	Sign. level	Partial squared eta
Sexting	Mean frequency	0.98 (.23)	0.50 (.07)	3.83	.051	.002
	Mean chronicity	6.36 (1.49)	6.95 (.665)	0.13	.72	.001
Sexual orientation victimization	Mean frequency	1.27 (.10)	0.10 (.03)	339.44	<.001	.11
	Mean chronicity	4.54 (.50)	0.42 (.20)	59.41	<.001	.24
Gender-based victimization	Mean frequency	2.065 (.21)	0.46 (.06)	56.07	<.001	.031
	Mean chronicity	7.21 (.86)	5.11 (.46)	4.63	<.05	.026
Unwanted sexual attention	Mean frequency	2.61 (.23)	1.06 (.07)	40.91	<.001	.023
	Mean chronicity	6.1 (.51)	4.75 (.22)	5.92	<.05	.014
Sextortion	Mean frequency	0.39 (.12)	0.17 (.035)	3.23	.07	.002
	Mean chronicity	4.37 (1.40)	4.88 (0.68)	0.10	.75	.002
Revenge porn	Mean frequency	0.29 (.078)	0.12 (.023)	4.61	<.05	.003
	Mean chronicity	5.43 (1.21)	3.6 (0.47)	1.98	.17	.035

Note. Chronicity reflects the average frequency only among those who had presented with at least one occasion of a given victimization the previous year.

Table 4Spearman bivariate correlations among study variables.

	1	2	3	4	5	6	7	8	9	10
1. Being a sexual minority										
2. Sex $(1 = \text{women}, 2 = \text{men})$	08***									
3. Age	.04 ns	03								
4. Sexting	.10***	02	.23***							
5. Sexual orientation victimization	.44***	06	.09***	.11***						
6. Gender-based victimization	.17***	11**	.08**	.07**	.29***					
7. Unwanted sexual attention	.15***	19***	.26***	.27***	.27***	.28***				
8. Sextortion	.08***	03	.09***	.26***	.24***	.14***	.24***			
9. Revenge porn	.04	03	.09***	.24***	.11***	.12***	.24***	.37***		
10. Depression	.20***	15***	.28***	.21***	.23***	.25***	.38***	.16***	.15***	
11. Anxiety	.16***	15***	.25***	.22***	.20***	.22***	.35***	.17***	.15***	.73***

^{**}p < .01, ***p < .001.



Note. The values given are non-standardized coefficients. Standard errors are in parentheses. Sex and age were included as control variables in

the model. * p < .05, ** p < .01, *** p < .001

Fig. 1. Structural equation model for the relation between being a sexual minority, OSVR, and mental health outcomes.

 Table 5

 Significant indirect effects in the estimated model.

Indirect effects	Test statistic	Std. Error	Sign. level
Being a sexual minority \rightarrow Sexting \rightarrow Depression	2.41	0.018	p < .05
Being a sexual minority → Sexual orientation victimization → Depression	2.81	0.046	p < .01
Being a sexual minority → Gender-based victimization → Depression	3.41	0.025	p < .001
Being a sexual minority → Unwanted sexual attention → Depression	3.42	0.022	p < .001
Being a sexual minority → Sexting → Anxiety	2.43	0.017	p < .05
Being a sexual minority → Sexual orientation victimization → Anxiety	2.19	0.030	p < .05
Being a sexual minority → Gender-based victimization → Anxiety	2.97	0.019	p<.01
Being a sexual minority \rightarrow Unwanted sexual attention \rightarrow Anxiety	3.55	0.021	p < .001

indirect effects in the model. As shown, being a sexual minority significantly increased the probability of sexting, sexual orientation victimization, gender-based victimization, and unwanted sexual attention; these outcomes, in turn, significantly increased the probability of presenting more symptoms of depression and anxiety. Neither sextortion or revenge porn, however, mediated the relationship between being a

sexual minority and mental health outcomes. The total effects (including direct and indirect effect of sexual orientation on mental health outcomes) was .21 for depression and .16 for anxiety (standardized coefficients; both, p<.001).

4. Discussion

Homophobia and discrimination against sexual minorities is still present in multiple instances of current society, including the online context. The present study focused on the different forms of OSVR among bisexual, homosexual, pansexual, asexual, and queer adolescents. The results show that sexual minorities have a higher prevalence and frequency in most of the types of OSVR studied. Furthermore, OSVR can have a significant impact on the psychological adjustment of sexual minorities, including symptoms of depression and anxiety. The implications of these results at the theoretical and applied level are discussed below.

Sexting was more prevalent among sexual minority adolescents (17%) than among heterosexuals (7%). These results are consistent with those obtained in previous prevalence studies, thus indicating that more sexual minorities than heterosexuals participate in sexting (e.g., Gámez-Guadix et al., 2017; Morelli et al., 2016) and use the internet more frequently to find romantic or sexual partners (Ybarra & Mitchell, 2016). The internet has provided a means to find romantic or sexual partners more easily and securely than in offline contexts, where sexual

minorities may face rejection and discrimination because of their sexual preferences (Hillier et al., 2012). It should also be highlighted that, although a higher proportion of sexual minorities than heterosexuals participate in sexting, there are no differences in the average frequency among those who practice sexting as a function of sexual orientation (chronicity data). This finding indicates that adolescents who participate in sexting do so with a similar frequency (i.e., between six and seven times in the last year), regardless of sexual orientation.

Notably, 41% of sexual minorities (compared to 3% of heterosexuals) had experienced online discrimination based on their sexual orientation. Additionally, more than one in four sexual minority adolescents had been victimized for not assuming traditional gender roles—three times the ratio of heterosexuals. These findings suggest that, despite the fact that Western society has made considerable progress in the last decades in achieving sexual minority rights, our societies are still far from eradicating homophobia and discrimination. The results are consistent with findings concerning offline homophobic bullying (Orue et al., 2018). One possible hypothesis is that online homophobic bullying could simply reflect the level of offline homophobia. Although homophobic discrimination behaviors may have decreased in recent decades (e.g., extreme assaults for being homosexual), it is plausible that there are still many incidences of homophobic bullying that manifest in subtler ways (e.g., comments and prejudices towards sexual minorities). Alternatively, the internet (due to its perceived anonymity and the online disinhibition effect) could be providing a medium in which to express homophobic attitudes and behaviors that could be politically incorrect and socially censured and, therefore, are not expressed face to

Sexual minorities have double the prevalence of unwanted sexual attention and almost threefold the prevalence of sextortion than heterosexuals, a finding which is aligned with previous studies (e.g., Patchin & Hinduja, 2020b; Priebe & Svedin, 2012; Van Ouytsel, Walrave, De Marez, Vanhaelewyn, & Ponnet, 2021). These results could be due to different factors. For example, the greater social perception of homosexuals as sexually "promiscuous," "willing," or "easy" (Lyonga, 2019) could lead others to try unwanted sexual approaches towards them. This finding is consistent with the results of previous studies among women who are considered "easy" or "whores" (Walker & Sleath, 2017). This stereotype could mislead aggressors into the idea that they can attempt sexual approaches even if the recipient rejects them. Future studies should examine these hypotheses.

Finally, we analyze whether the relationship found between belonging to a sexual minority and presenting more symptoms could be due in part to the greater OSVR among sexual minorities. The results showed that sexting, sexual-orientation and gender-based victimization, and unwanted sexual attention partially mediated the relationship between being a sexual minority and mental health outcomes. It is important to highlight that the mediation was partial. In this sense, it is possible that other aspects related to sexual orientation (e.g., experiences of offline discrimination throughout life) can also account for the direct relationship between belonging to a sexual minority and higher depression and anxiety symptoms. Sextortion and revenge porn, however, did not have a significant effect on mental health, regardless of sexual orientation. Both sextortion and revenge porn correlated significantly with other forms of OSVR, such as sexting or unwanted sexual attention; the shared variance between these variables could explain why sextortion and revenge porn were not significant predictors in the final model. In addition, sextortion and revenge porn showed a relatively low prevalence among adolescents, explaining why they may have a limited impact on highly prevalent problems during adolescence (e.g., depression and anxiety symptoms). In any case, the results indicate that OSVR has become an important problem among sexual minorities and has a significant relationship to mental health outcomes.

4.1. Limitations and future lines of research

This study has some limitations that must be considered. First, although the sample was random, it was not representative, so caution is recommended in generalizing the results. Furthermore, the results could vary in other cultural contexts depending on the level of homophobic attitudes and behaviors present in each cultural context. For example, Spain legalized equal marriage among same-sex partners in 2005, becoming the third country in the world to legally approve it, and it is considered one of the most open and tolerant countries in terms of sexual orientation. The prevalence or frequency rates of OSVR among sexual minorities, as well as the differences with heterosexuals, could be greater in other countries. Future studies should replicate these results in other cultural contexts. Second, this study is cross-sectional, which prevents establishing causal relationships between the variables. Future longitudinal studies should clarify the temporal order of the variables. Third, the sexting measure in the present study included the sending of both images and sexually explicit messages. It is important to note that the two forms of sexting could have different personal, social, and legal consequences. For example, the sending of sexually explicit images could be prosecuted in some countries as creation of child pornography (Ngo et al., 2017). Therefore, future studies should explore differentiated consequences for different types of sexting.

This study opens future lines of work that need to be explored. This study focused on online victimization. It would be relevant to analyze the relationship between offline and online forms of sexual victimization. Second, future cross-cultural studies should explore the relationship between social variables (e.g., achievement of legal rights) and the degree of OSVR among sexual minorities. Third, this study focused on sexual orientation, but did not assess discrimination due to being transgender. Future studies should focus on online discrimination of transgender people and mental health outcomes related to victimization experiences. Finally, it is essential to develop specific prevention programs about homophobia that specifically consider the online context. Future studies should explore coping strategies used by sexual minorities when online hate speech situations arise against them (Wachs et al., 2020). Common and differential predictors between online discrimination and face-to-face discrimination should also be explored, based on recent research suggesting differences in other forms of (cyber) aggression (e.g., Muñoz-Fernández & Sánchez-Jiménez, 2020).

4.2. Conclusions

This is one of the first studies to systematically analyze a set of OSVR among sexual minorities and to include indicators of prevalence and frequency. The data suggest that sexual minorities continue to be victims online. Furthermore, OSVR is significantly related to worse mental health outcomes. There is still a long way to go in real equality and rights. The design of specific prevention programs that educate and reduce the incidence of OSVR is crucial. It is also essential that mental health professionals working with sexual minorities are alert to possible victimization experiences and the potential consequences for clients' psychosocial outcomes. Finally, much remains to be done to eradicate homophobic attitudes that discriminate against sexual minorities. Studies that provide empirical information are a necessary first step.

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