



Bullying and cyberbullying in LGBT adolescents: Prevalence and effects on mental health

Acoso y ciberacoso en adolescentes LGTB: Prevalencia y efectos en la salud mental

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ABSTRACT

Bullying and cyberbullying have negative consequences on adolescents' mental health. The study had two objectives: 1) to analyze possible differences in sexual orientation (heterosexual and non-heterosexual) in the percentage of victims and aggressors of bullying/cyberbullying, as well as the amount of aggressive behavior suffered and carried out; 2) to compare the mental health of adolescent heterosexual and non-heterosexual victims, aggressors, cybervictims, and cyberaggressors. Participants included 1,748 adolescents from the Basque Country, aged between 13 and 17 years (52.6% girls, 47.4% boys), 12.5% non-heterosexuals, 87.5% heterosexuals, who completed 4 assessment instruments. A descriptive and comparative cross-sectional methodology was used. The results confirm that: 1) the percentage of victims and cybervictims was significantly higher in non-heterosexuals, but the percentage of heterosexual and non-heterosexual aggressors and cyberaggressors was similar; 2) non-heterosexual victims and cybervictims had suffered significantly more aggressive bullying/cyberbullying; 3) non-heterosexual victims and aggressors of bullying exhibited significantly more depression, social anxiety, and psychopathological symptoms (somatization, obsession-compulsion, interpersonal sensitivity...) than heterosexuals; 4) non-heterosexual cybervictims and cyberaggressors displayed more depression and more psychopathological symptoms, but no differences were found in social anxiety. The importance of intervening from the family, school, and society to reduce bullying/cyberbullying and enhance respect for sexual diversity is discussed.

RESUMEN

Acoso y ciberacoso tienen consecuencias muy negativas en la salud mental de los adolescentes. El estudio tuvo dos objetivos: 1) analizar si existen diferencias en función de la orientación sexual (heterosexuales y no-heterosexuales) en el porcentaje de víctimas y agresores de acoso y ciberacoso, así como en la cantidad de conducta agresiva sufrida-realizada; 2) comparar la salud mental de adolescentes heterosexuales y no-heterosexuales que han sido víctimas, agresores, cibervíctimas y ciberagresores. Participaron 1.748 adolescentes del País Vasco, entre 13 y 17 años (52,6% chicas, 47,4% chicos), 12,5% no-heterosexuales, 87,5% heterosexuales, que cumplimentaron 4 instrumentos de evaluación. Se utilizó una metodología descriptiva y comparativa transversal. Los resultados confirman que: 1) el porcentaje de víctimas y cibervíctimas fue significativamente mayor en el grupo no-heterosexual, sin embargo, el porcentaje de agresores y ciberagresores heterosexuales y no-heterosexuales fue similar; 2) víctimas y cibervíctimas no-heterosexuales habían sufrido significativamente más cantidad de conductas agresivas de acoso/ciberacoso; 3) víctimas y agresores de acoso no-heterosexuales comparados con heterosexuales tenían significativamente más depresión, ansiedad social y síntomas psicopatológicos diversos (somatización, obsesión-compulsión, sensibilidad interpersonal...); 4) cibervíctimas y ciberagresores no-heterosexuales también presentaban más depresión y más síntomas psicopatológicos diversos, sin embargo, en ansiedad social no se hallaron diferencias. El debate se centra en la importancia de intervenir desde la familia, la escuela y la sociedad, para reducir el acoso/ciberacoso y estimular el respeto por la diversidad sexual.

KEYWORDS | PALABRAS CLAVE

Bullying, cyberbullying, LGBT-phobia, sexual orientation, prevalence, mental health, homophobia, school violence. Acoso, ciberacoso, LGTB-fobia, orientación sexual, prevalencia, salud mental, homofobia, violencia escolar.

1. Introduction

In recent years, bullying and cyberbullying have aroused considerable social concern and interest in the scientific community. Bullying refers to the existence of a defenseless victim, harassed by one or more aggressors, with power inequality, who frequently engage in aggressive behavior towards the victim (physical, verbal, social exclusion...) with the intention of causing harm.

Cyberbullying is a new type of bullying, which uses information and communication technologies, the Internet (email, messaging, chats, the web, games...) and mobile phones to bully classmates. A review of national and international epidemiological studies has identified a relevant prevalence of bullying and cyberbullying (2-12% victims; 1-10% cybervictims) (Garaigordobil, 2018), along the same lines as the recent study by Save the Children (2016) with adolescent Spaniards (9.3% victims; 6.9% cybervictims). The impact of these behaviors can be devastating. People with a non-normative sexual orientation and identity are a vulnerable population (Poteat & Espelage, 2005), and suffer bullying/cyberbullying and aggressive LGBT-phobic behaviors more frequently. LGBT-phobic bullying refers to bullying motivated by a phobia toward the LGBT population, and homophobia/LGBT-phobia is defined as a hostile attitude of aversion... that considers that a non-normative sexual orientation (homosexual, bisexual, transsexual...) is inferior, pathological..., and that LGBT individuals are sick, unbalanced, delinquents... The study is contextualized within a theoretical framework that considers behavior to be influenced by the social norms prevailing in the socio-cultural environment, and that stereotypes/prejudices fostered by a hetero-normative society stigmatize LGBT individuals, justifying and promoting their bullying, impacting their mental health negatively.

In line with the theory of social identity, in order to maintain a positive social identity, individuals tend to overrate their group, attributing positive characteristics to it, to the detriment of the outgroup, whose stereotype is negative. This categorization and contempt encourage and justify aggressive behaviors toward the other group. Studies show an increase of homophobic insults with age (Espelage & al., 2017), identifying the school context as the main area for their use (Generelo & al., 2012), and the classmates, especially males, playing an important role in the formulation of these insults (Birkett & Espelage, 2015). Given the relevant role of the educational context, it is necessary to assess adolescent attitudes towards sexual diversity and, if necessary, to intervene and reinforce respect and tolerance.

1.1. Prevalence of bullying and cyberbullying in LGBT individuals

In relation to bullying, some research has revealed data ranging from 51% to 58% of victimization in people with non-normative sexual orientation/identity (Generelo, Garchitorena, Montero, & Hidalgo, 2012; Martxueta & Etxeberria, 2014). In cyberbullying, cybervictimization rates between 10% and 71% have been reported in LGBTs (Abreu & Kenny, 2017; COGAM, 2016; Cooper & Blumenfeld, 2012; Kosciw, Greytak, Giga, Villenas, & Danischewski, 2016). The discrepancies between studies are due to the different ages of the samples and the different behaviors measured.

Studies that have focused on comparing victimization levels as a function of sexual orientation suggest that non-heterosexuals suffer a greater amount of bullying compared to heterosexuals (Abreu & Kenny, 2017; Baiocco, Pistella, Salvati, Lovernò, & Lucidi, 2018; Bouris, Everett, Heath, Elsaesser, & Neilands, 2016; Camodeca, Baiocco, & Posa, 2018; Collier, Bos, & Sandfort, 2013; COGAM, 2016; Elipe, De-la-Oliva-Muñoz, & Del-Rey, 2017; Gegenfurtne & Gebhardt, 2017; Toomey & Russel, 2016). Research analyzing the aggressor role from a sexual diversity perspective has focused on the prevalence of aggressors' LGBT-phobic behavior, but it has not compared bullying/cyberbullying perpetration among heterosexuals and non-heterosexuals.

1.2. Bullying/cyberbullying in LGBTs and mental health

Some research has shown that LGBTs who have been victims of bullying and cyberbullying at school show depression and anxiety (Ferlatte, Dulai, Hottes, Trussler, & Marchand, 2015; Martxueta & Etxeberria, 2014; Wang & al., 2018), psychological distress (Birkett, Newcomb, & Mutanski, 2015), and risk of suicide (Cooper & Blumenfeld, 2012; Duong & Bradshaw, 2014; Ferlatte & al., 2015; Luong, Rew, & Banner, 2018; Quintanilla, Sánchez-Loyo, Correa-Márquez, & Luna-Flores, 2015; Ybarra, Mitchell,

Kosciw, & Korchmaros, 2014). Few studies compare heterosexual and non-heterosexual cybervictims and cyber-aggressors in different mental health variables, to explore whether the cyber-victimization of LGBTs is associated with further deterioration of their mental health, compared to health of heterosexual cybervictims and cyber-aggressors.

The studies of Ybarra and others (2014) are worth mentioning. They showed that the relationship between suicidal ideation and bullying was stronger in gays, lesbians and queers, compared to bisexuals, heterosexuals, and those who were uncertain of their sexual orientation. Hence, there is hardly any research that focuses on this differentiation with other mental health variables.

1.3. Objectives and hypotheses

The study had two objectives: 1) to analyze possible differences as a function of sexual orientation (heterosexual and non-heterosexual) in the percentage of victims and aggressors of bullying and cyberbullying (victims, aggressors, cybervictims, cyberaggressors) and in the amount of aggressive behavior suffered and performed in both groups; 2) to compare the mental health (depression, social anxiety, interpersonal sensitivity, somatization, phobic anxiety, paranoid ideation...) of heterosexuals and non-heterosexuals who have been victims, aggressors, cybervictims and cyberaggressors. These objectives are formulated in three hypotheses:

Studies that have focused on comparing victimization levels as a function of sexual orientation suggest that non-heterosexuals suffer a greater amount of bullying compared to heterosexuals.

- H1. The percentage of victims and cybervictims will be significantly higher in the group of non-heterosexual adolescents, compared to the percentage of victims and cybervictims of the heterosexual group, whereas there will be no differences in the percentage of heterosexual and non-heterosexual aggressors and cyberaggressors.
- H2. The amount of behavior suffered by victims and cybervictims will be significantly higher in the group of non-heterosexuals, compared to the amount suffered by heterosexual victims and cybervictims; however, no differences will be found between the two conditions in the amount of aggressive bullying and cyberbullying behavior performed.
- H3. Compared to heterosexuals, non-heterosexual victims, cybervictims, aggressors, and cyberaggressors will have significantly poorer mental health, which will manifest in more symptoms of depression, social anxiety, increased general psychopathology, and a larger amount of diverse psychopathological symptoms (somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism).

2. Material and methods

2.1. Participants

The study sample is made up 1,748 adolescents aged 13 to 17 years (52.6% girls, 47.4% boys) from 19 schools. Concerning educational level, 60.2% are in 3rd grade of Secondary Education and 39.8% are studying 4th grade (44.7% in public schools and 55.3% in private schools). Regarding sexual orientation, 87.5% are heterosexual, 0.7% are gay, 0.2% are lesbian, 5.7% are bisexual, and 5.9% are unsure of their sexual orientation; that is, 12.5% are non-heterosexual and 87.5% are heterosexual. The sample was selected randomly and is representative of the students of the last cycle of Secondary Education of the Basque Country (N=37.575). Using a confidence level of 0.95, with a sample error of 2.3%, the representative sample is 1,732. A stratified sampling technique was used to select the sample, taking into account the following parameters: province, type of school (public-private), and educational level (3rd and 4th grades).

2.2. Instruments

To measure the variables under study, in addition to a sociodemographic questionnaire requesting information on sexual orientation, four evaluation tools with psychometric guarantees were used.

- **Cyberbullying.** Screening of Peer Harassment (Garaigordobil, 2013; 2017). This assesses bullying and cyberbullying. The bullying scale measures four types of bullying (physical, verbal, social, and psychological), and the cyberbullying scale explores 15 behaviors related to cyberbullying (sending offensive/threatening messages, phoning to insult/threaten, recording an aggression/humiliation and uploading the video, creating rumors to slander, stealing a password, isolating on social networks...). Adolescents report how often they have suffered and performed these behaviors over the course of their lives. Four scores are provided: level of victimization, cybervictimization, aggression, and cyberaggression. The Cronbach alpha coefficients with the original sample show adequate internal consistency (bullying $\alpha=.81$; cyberbullying $\alpha=.91$), as in the sample of this study (bullying $\alpha=.76$; cyberbullying $\alpha=.84$).
- **Beck Depression Inventory-II (BDI-II;** Beck & al.,1996; adaptation of Sanz, García-Vera, Espinosa, Fortún, & Vázquez, 2005). It is composed of 21 items that measure the severity of depression. The items measure symptoms of depression: sadness, pessimism, feelings of failure, loss of pleasure, feeling guilty, feelings of punishment, self-dissatisfaction, self-criticism, thoughts of suicide, crying, agitation, loss of interest, indecision, futility, loss of energy, changes in sleep pattern, irritability, changes in appetite, difficulty concentrating, tiredness or fatigue, and loss of interest in sex. The adolescent reports the degree to which he or she has had these symptoms over the past two weeks. The alpha coefficients with the original sample were adequate ($\alpha=.87$), as in sample of this study ($\alpha=.84$).
- **Social Anxiety Scale for Adolescents (SAS-A;** La-Greca & Stone, 1993; Spanish adaptation Olivares & al., 2005). It is made up of 22 items that evaluate global social anxiety (social phobia) and 3 sub-dimensions: fear of negative evaluation, social avoidance and distress in the face of unknown situations and strangers, and stress in the company of acquaintances. Adolescents report how often (never-always) they have such thoughts, feelings, behaviors... The internal consistency of the test in the original sample was high ($\alpha=.91$), as in the sample in this study ($\alpha=.87$).
- **90-Symptom Checklist-Revised (SCL-90-R;** Derogatis, 2002). This contains 90 items on nine scales that report psychopathological alterations: somatization (experiences of body dysfunction, neurovegetative alterations of the cardiovascular, respiratory, gastrointestinal and muscular systems), obsession-compulsion (absurd and unwanted behaviors, thoughts... that generate intense distress and are difficult to resist, avoid, or eliminate), interpersonal sensitivity (timidity and embarrassment, discomfort and inhibition in interpersonal relationships), depression (anhedonia, hopelessness, helplessness, lack of energy, self-destructive ideas...), anxiety (generalized and acute anxiety/panic), hostility (aggressive thoughts, feelings and behaviors, anger, irritability, rage, and resentment), phobic anxiety (agoraphobia and social phobia), paranoid ideation (paranoid behavior, suspicion, delirious ideation, hostility, grandiosity, need for control...), and psychoticism (feelings of social alienation). A total score is obtained from the summary of the scales of the SCL-90-R (general degree of psychopathology). Studies with Spanish samples suggest good reliability ($\alpha=.81$ to $.90$), as in this study ($\alpha=.97$).

2.3. Procedure

This study uses a descriptive and comparative cross-sectional methodology. Firstly, a letter was sent to the headmasters of the randomly selected schools, explaining the research project. Those who agreed to participate received informed consents for parents and participants. Subsequently, the evaluation team visited the schools and administered the assessment tools to the students (in one 50-minute session). The study fulfilled the ethical values required in human research, having been favorably evaluated by the Ethics Commission of the UPV/EHU (M10_2017_094).

2.4. Data analysis

To determine the prevalence of heterosexual and non-heterosexual victims, cybervictims, aggressors, and cyberbullies, the frequencies/percentages of students who had suffered and engaged in bullying/cyberbullying frequently (fairly often + always) were calculated and, through contingency analysis, the Pearson Chi square was obtained to compare the two conditions. Second, to identify possible differences as a function of sexual orientation in the four indicators of bullying/cyberbullying (victimization, cybervictimization, aggression, cyberaggression), descriptive analysis (means and standard deviations), analysis of univariate variance, and effect size analysis (Cohen's d : small $< .50$; moderate $.50$ -.79; large $\geq .80$) were performed with the scores of the heterosexuals and non-heterosexuals. Finally, to explore possible differences according to sexual orientation (heterosexuals and non-heterosexuals) in various psychopathological symptoms (mental health), first, we selected the sample of bullying victims (who had reported having suffered aggressive bullying during their lifetime), and we performed an analysis of variance (MANOVA, ANOVA) as a function of heterosexual and non-heterosexual group membership. The same procedure was performed with cybervictims, aggressors, and cyberaggressors, respectively. Data analysis was performed with the SPSS 24.0 program.

3. Results

3.1. Prevalence of heterosexual and non-heterosexual victims and cybervictims

The percentages of heterosexual and non-heterosexual students who had frequently (fairly often + always) suffered bullying and cyberbullying were: 1) severe victims: 11% ($n=193$) of the victims had suffered bullying frequently over the course of their lives. The percentage of severe heterosexual and non-heterosexual victims of the sample in each sexual orientation group was 9% heterosexuals ($n=138$) and 25.1% non-heterosexuals ($n=55$). The percentage of victims was significantly higher in the non-heterosexual group ($X^2=50.48$, $p<.001$); 2) severe cybervictims: 7.2% ($n=126$) of the victims had frequently suffered cyberbullying. The percentage of severe heterosexual and non-heterosexual cybervictims of the sample in each sexual orientation group was 6.2% heterosexuals ($n=95$) and 13.7% non-heterosexuals ($n=30$). The percentage of cybervictims was significantly higher in the non-heterosexual group ($X^2=16.16$, $p<.001$). Thus, the percentage of victims and cybervictims was significantly higher in the non-heterosexual group, compared to the percentage of victims and cybervictims of the heterosexual group.

3.2. Prevalence of heterosexual and non-heterosexual aggressors and cyberaggressors

The percentages of heterosexual and non-heterosexual students who had frequently performed (fairly often + always) bullying and cyberbullying were: 1) severe aggressors: 2.7% ($n=47$) had frequently performed bullying behaviors. The percentage of severe heterosexual and non-heterosexual aggressors in the sample of each sexual orientation group was 1.7% heterosexuals ($n=38$) and 0.9% non-heterosexuals ($n=9$). No significant differences were found as a function of sexual orientation ($X^2=0.75$, $p>.05$); 2) severe cyberaggressors: 1.6% ($n=28$) had frequently engaged in cyberbullying behaviors. The percentage of severe heterosexual and non-heterosexual cyberaggressors of the sample in each sexual orientation was 1.7% heterosexuals ($n=26$) and 0.9% non-heterosexuals ($n=2$). No significant differences were found ($X^2=0.75$, $p>.05$). Thus, the percentage of adolescent heterosexual and non-heterosexual aggressors and cyberaggressors was similar.

3.3. Victimization, cybervictimization, aggression, and cyberaggression levels

Concerning differences in the level of victimization and cybervictimization as a function of sexual orientation, the results (Table 1) show that, compared to heterosexuals, non-heterosexual victims/cybervictims had suffered a significantly greater amount of aggressive bullying and cyberbullying (moderate effect size in victimization). In relation to the level of aggression and cyberaggression (Table 1), the results show that the amount of face-to-face aggressive behavior performed was significantly higher in the non-heterosexual group, but the amount of cyberbullying behavior performed was similar in the two groups.

Table 1. Means, standard deviations, analysis of variance, and effect size (Cohen's d) in indicators of bullying and cyberbullying in heterosexuals and non-heterosexuals

	Heterosexuals (n=1.529)	Non-heterosexuals (n=219)	F (p)	d
	M (SD)	M (SD)		
Victimization	0.84 (1.53)	1.96 (2.19)	89.71 (.000)	.59
Cybervictimization	0.92 (2.03)	1.99 (3.32)	43.83 (.000)	.38
Aggression	0.44 (0.92)	0.60 (0.97)	5.26 (.022)	.16
Cyberaggression	0.35 (1.43)	0.42 (1.52)	0.49 (.486)	.04

Notes. M=Mean, SD=Standard deviation, F=Fisher's F, p=Significance, d=Effect size.

In short, non-heterosexual victims and cybervictims had suffered significantly more aggressive bullying and cyberbullying behaviors during their lifetime. Non-heterosexual aggressors had performed a significantly greater amount of aggressive face-to-face behaviors, although no differences were found in the amount of behavior performed by cyberaggressors in the two conditions.

Table 2. Means, standard deviations, analysis of variance, and effect size (Cohen's d) of psychopathological symptoms as a function of sexual orientation in victims and cybervictims

Variables	Victims				Cybervictims			
	Hetero (n=574)	Non-Hetero (n=149)	F (p)	d	Hetero (n=515)	Non-Hetero (n=117)	F (p)	d
	M (SD)	M (SD)			M (SD)	M (SD)		
Total BDI-II	10.19 (8.23)	14.03 (9.55)	23.99 (.000)	.43	10.74 (8.34)	13.95 (9.19)	13.58 (.000)	.36
SAS Negative E.	20.45 (6.88)	21.56 (7.99)	2.85 (.092)	.15	20.37 (7.13)	21.04 (7.93)	0.81 (.370)	.09
SAS A. Strangers	16.61 (4.98)	17.53 (5.62)	3.79 (.005)	.17	16.48 (5.13)	17.09 (5.53)	1.29 (.255)	.11
SAS A. Acquaintances	8.23 (3.26)	9.11 (3.78)	8.04 (.017)	.25	8.05 (3.28)	8.79 (3.80)	4.52 (.034)	.21
Total SAS	45.30 (12.69)	48.20 (15.06)	5.70 (.000)	.21	44.90 (13.23)	46.91 (15.37)	2.08 (.255)	.14
SCL90 Somatization	10.93 (7.99)	14.60 (9.19)	23.35 (.000)	.43	11.36 (7.96)	14.82 (9.41)	16.85 (.034)	.40
SCL90 Obs-Comp.	12.48 (7.94)	16.10 (8.52)	23.81 (.000)	.44	12.74 (8.17)	15.97 (8.65)	14.58 (.150)	.38
SCL90 Interp. Sens.	8.54 (7.15)	10.96 (7.42)	13.36 (.000)	.33	8.58 (6.90)	10.81 (7.72)	9.52 (.000)	.30
SCL90 Depression	11.35 (9.61)	16.74 (11.31)	34.49 (.000)	.51	11.63 (9.70)	16.14 (10.99)	19.55 (.000)	.44
SCL90 Anxiety	7.15 (7.34)	9.88 (9.09)	14.75 (.000)	.33	7.28 (7.48)	9.74 (9.42)	9.31 (.002)	.29
SCL90 Hostility	5.36 (5.01)	6.85 (5.64)	9.83 (.002)	.28	5.65 (5.26)	6.94 (5.77)	5.49 (.019)	.23
SCL90 Phobic-Anx.	2.86 (3.84)	4.07 (4.99)	10.23 (.001)	.27	3.03 (3.86)	4.42 (5.43)	10.42 (.001)	.30
SCL90 Paranoid	5.54 (4.66)	7.26 (5.06)	15.43 (.000)	.35	5.58 (4.68)	7.25 (5.14)	11.67 (.001)	.34
SCL90 Psychoticism	4.73 (5.80)	7.30 (7.06)	21.19 (.000)	.40	4.80 (5.80)	7.28 (7.18)	15.94 (.000)	.38
Total SCL90	68.95 (47.28)	93.75 (53.87)	30.67 (.000)	.49	70.65 (47.50)	93.37 (55.48)	20.44 (.000)	.44

Notes. Hetero=Heterosexuals, Non-Hetero=Non-Heterosexuals, M=Mean, SD=Standard deviation, f=Fisher's F, p=Significance, d=Effect size, SAS Negative E=Fear of negative evaluation, SAS A. Strangers=Avoidance of strangers, SAS A. Acquaintances=Avoidance of acquaintances, Total SAS=Global Social Anxiety score, Obs-Comp=Obsession-Compulsion, Interp. Sens=Interpersonal sensitivity, Phobic-Anx= Phobic anxiety, Total SCL90=Global Psychopathology Score.

3.4. Victimization and cybervictimization in the mental health of adolescent LGBTs

Regarding differences in psychopathological symptoms between victims and cybervictims as a function of sexual orientation (heterosexuals, non-heterosexuals), the multivariate analyses of variance (MANOVA)

performed with all the mental health variables revealed significant differences between heterosexual and non-heterosexual bullying victims, Wilks' Lambda, $\Lambda=0.942$, $F(13,708)=3.36$, $p<.001$ (small effect size, $\eta^2=0.058$, $r=0.24$). The same results were found in cybervictims, Wilks' Lambda, $\Lambda=0.953$, $F(13,618)=2.34$, $p<.05$ (small effect size, $\eta^2=0.047$, $r=0.22$). The results of the descriptive, univariate and effect size analyses of each variable are presented in Table 2. Non-heterosexual victims and cybervictims presented significantly more psychopathology than heterosexual victims/cybervictims (moderately low and low effect size).

Table 3. Means, standard deviations, analysis of variance, and effect size (Cohen's d) of psychopathological symptoms as a function of sexual orientation in aggressors and cyberaggressors

Variables	Aggressors				Cyberaggressors			
	Hetero (n=413)	Non-Hetero (n=81)	F (p)	d	Hetero (n=268)	Non-Hetero (n=47)	F (p)	d
	M (SD)	M (SD)			M (SD)	M (SD)		
Total BDI-II	9.47 (7.91)	13.91 (9.16)	20.29 (.000)	.52	10.65 (8.57)	14.94 (9.88)	9.53 (.002)	.46
SAS Negative E.	19.71 (6.77)	21.02 (7.40)	2.47 (.117)	.18	19.81 (6.91)	21.53 (8.49)	2.31 (.129)	.22
SAS A. Strangers	16.24 (5.03)	17.49 (5.54)	4.09 (.044)	.24	16.60 (4.98)	17.55 (5.96)	1.39 (.239)	.17
SAS A. Acquaintances	8.05 (3.19)	8.88 (3.19)	4.49 (.035)	.26	8.03 (3.08)	9.13 (3.98)	4.59 (.033)	.31
Total SAS	44.00 (12.52)	47.40 (13.73)	4.81 (.029)	.26	44.44 (12.65)	48.21 (16.39)	3.24 (.073)	.26
SCL90 Somatization	10.77 (7.91)	15.19 (9.76)	19.45 (.000)	.50	12.04 (7.99)	13.72 (7.59)	1.79 (.181)	.22
SCL90 Obs-Comp.	12.17 (8.16)	16.63 (7.49)	20.72 (.000)	.57	13.19 (8.31)	16.32 (8.61)	5.59 (.019)	.37
SCL90 Interp. Sens.	7.97 (6.86)	11.17 (7.63)	14.17 (.000)	.44	9.06 (7.32)	11.36 (8.39)	3.76 (.053)	.29
SCL90 Depression	10.50 (9.44)	16.64 (11.10)	26.95 (.000)	.60	11.82 (9.69)	16.17 (11.85)	7.51 (.007)	.40
SCL90 Anxiety	6.67 (7.13)	10.14 (9.66)	14.13 (.000)	.41	7.46 (7.71)	10.68 (9.19)	6.56 (.011)	.38
SCL90 Hostility	5.60 (5.21)	7.27 (6.05)	6.62 (.010)	.30	6.28 (5.49)	8.96 (6.80)	8.79 (.003)	.43
SCL90 Phobic-Anx.	2.59 (3.62)	4.42 (4.92)	15.09 (.000)	.42	2.99 (4.03)	5.19 (5.99)	10.17 (.002)	.43
SCL90 Paranoid	5.39 (4.71)	7.41 (4.89)	12.29 (.000)	.42	5.66 (4.79)	7.38 (5.55)	4.90 (.028)	.33
SCL90 Psychoticism	4.54 (5.77)	8.30 (7.21)	26.30 (.000)	.58	4.76 (5.55)	8.51 (8.56)	15.14 (.000)	.52
Total SCL90	66.20 (47.03)	97.16 (53.06)	28.08 (.000)	.63	73.28 (48.71)	98.30 (60.53)	9.76 (.002)	.46

Notes. Hetero=Heterosexuals, Non-Hetero=Non-Heterosexuals, M=Mean, SD=Standard deviation, f=Fisher's F, p=Significance, d=Effect size, SAS Negative E=Fear of negative evaluation, SAS A. Strangers=Avoidance of strangers, SAS A. Acquaintances=Avoidance of acquaintances, Total SAS=Global Social Anxiety score, Obs-Comp=Obsession-Compulsion, Interp Sens=Interpersonal sensitivity, Phobic-Anx= Phobic anxiety, Total SCL90=Global Psychopathology Score.

The analyses of variance (Table 2) confirmed that non-heterosexual victims (compared to heterosexual victims) showed significantly higher scores in depression (BDI-II), global social anxiety (SAS) (avoidance and social distress with acquaintances and strangers), in all the psychopathological symptoms of the SCL-90 (somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism), as well as in the global psychopathology score. Non-heterosexual cybervictims (compared to heterosexuals) (Table 2) obtained significantly higher scores in depression (BDI-II) and in all the psychopathological symptoms evaluated with the SCL-90 except for obsession-compulsion.

However, non-heterosexual cybervictims had a similar level of global social anxiety (social phobia) to the heterosexual cybervictims, although their anxiety in the presence of acquaintances was higher.

3.5. Differential mental health of adolescent LGBT aggressors and cyberaggressors

Regarding the differences in psychopathological symptoms between aggressors and cyberaggressors as a function of sexual orientation (heterosexuals, non-heterosexuals), the multivariate analyses of variance (MANOVA) with all the mental health variables yielded significant differences between heterosexual and non-heterosexual aggressors, Wilks' Lambda, $\Lambda=0.923$, $F(10,479)=3.07$, $p<.001$ (small effect size, $\eta^2=0.07$, $r=0.27$). The same results were found in cyberaggressors, Wilks' Lambda, $\Lambda=0.923$, $F(13,300)=1.92$, $p<.05$ (small effect size, $\eta^2=0.077$, $r=0.28$).

Consequently, non-heterosexual aggressors and cyberaggressors generally present significantly more psychopathology than heterosexual aggressors and cyberaggressors. The results of the descriptive, univariate, and effect size analyses in each variable under study are presented in Table 3.

As can be seen (Table 3), non-heterosexual aggressors (compared to heterosexuals) had significantly more depression (BDI-II), more social anxiety (SAS), more psychopathological symptoms evaluated with the SCL-90 (somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism), and a higher global psychopathology score. Non-heterosexual cyberaggressors had significantly more depression (BDI-II) and more psychopathological symptoms (obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism), except for symptoms of somatization. No differences were found in global social anxiety between heterosexual and non-heterosexual cyberaggressors (moderate effect size in depression and global psychopathology score).

4. Discussion and conclusions

The objective of the study was to analyze possible differences as a function of sexual orientation (heterosexuals and non-heterosexuals) in the percentage of victims and aggressors of bullying and cyberbullying, and in the amount of aggressive behavior they suffer and perform it also compares the mental health of heterosexuals and non-heterosexuals who have been victims, aggressors, cybervictims, and cyber-aggressors.

Firstly, the results confirm that the percentage of victims and cybervictims was significantly higher in non-heterosexual adolescents, compared to the percentage of heterosexual victims and cybervictims. However, the percentage of heterosexual and non-heterosexual aggressors and cyberaggressors was similar. Hypothesis one is confirmed. In addition, the overall prevalence of bullying and cyberbullying found in this study (11% victims; 7.2% cybervictims) confirms the prevalence found in recent epidemiological reviews and studies (Garaigordobil, 2018; Save the Children, 2016).

Secondly, the results show that non-heterosexual victims/cybervictims, compared to heterosexual victims/cybervictims, had suffered a greater amount of aggressive bullying and cyberbullying. Non-heterosexual aggressors had engaged in significantly more bullying behaviors, although no differences were found in cyberaggressors. Hypothesis two is partially confirmed, as non-heterosexual aggressors were also found to engage in a greater amount of aggressive bullying than heterosexuals.

The high vulnerability of people who do not match the stereotypes based on hetero-normativity is confirmed. The results point in the same direction as other studies that have shown that the LGBT collective is more vulnerable to bullying and cyberbullying (Abreu & Kenny, 2017; Baiocco & al., 2018; Birkett & al., 2009; Bouris & al., 2016; Camodeca & al., 2018; Collier & al., 2013; COGAM, 2016; Elipe & al., 2017; Gegenfurtne & Gebhardt, 2017; Pichardo & al., 2002; Shields & al., 2012; Toomey & Russel, 2016). As there are no studies comparing the prevalence of aggressors/cyberaggressors between heterosexuals and non-heterosexuals, the results of this study contribute to the knowledge.

Third, the results show that non-heterosexual victims and aggressors (compared to heterosexual victims and aggressors) have significantly more depression, social anxiety, and more psychopathological symptoms in all the scales (somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism). Non-heterosexual cybervictims

and cyberaggressors (compared to heterosexuals) present significantly more depression and more psychopathological symptoms (interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism). No differences were found in global social anxiety between heterosexual and non-heterosexual cybervictims and cyberaggressors. Hypothesis three is almost entirely confirmed, as greater social anxiety was not found in non-heterosexual cybervictims and cyberaggressors.

Therefore: 1) non-heterosexual victims and aggressors (versus heterosexuals) show more symptoms in all the evaluated psychopathological disorders (somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, social anxiety); 2) non-heterosexual cybervictims and cyberaggressors (versus heterosexuals) have more psychopathological symptoms (interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism), although they do not have more social anxiety; in addition, non-heterosexual cybervictims do not have more symptoms of obsession-compulsion, nor do cyberaggressors show more somatization; 3) non-heterosexual victims have greater anxiety/social phobia than non-heterosexual cybervictims.

Although there are no prior studies comparing diverse psychopathological symptoms in heterosexuals and non-heterosexuals who have suffered and/or performed bullying/cyberbullying—which is a contribution of this work—the results obtained confirm those found in research that has revealed psychopathological symptoms in victims with a non-normative sexual orientation that also found depression and anxiety (Ferlatte & al., 2015; Martxueta & Etxebarria, 2014; Wang & al., 2018).

The study provides data on the prevalence of LGBT-phobic bullying/cyberbullying and shows that LGBTs, in addition to being bullied/cyberbullied more frequently, also develop more psychopathological symptoms due to the victimization/cybervictimization they suffer than do heterosexuals who are bullied/cyberbullied. Among the limitations of the study are: 1) the use of self-reports with the desirability bias involved; 2) although there is greater visibility of LGBTs, many people still conceal their sexuality. If this is a reality in the general population, adolescents find it even more difficult to identify themselves as non-heterosexual. Hence, in the study emerged a percentage of adolescents who are uncertain about their sexuality and who were included in the non-heterosexual group, as other researchers have done; 3) the cross-sectional nature of the study, which does not allow causal inferences. Future studies could analyze the role of victim-aggressor, expand the LGBT sample, perform analyses as a function of age and gender, and design anti-bullying programs based on stigma, evaluating their effects on the stereotypes and prejudices towards LGBTs.

Both aggressive behavior towards sexual diversity and the internalized discrimination that characterizes LGBTs can be considered as the result of a society that is educated by a hetero-normative system. Children are not born as homophobes, they are modeled since their birth through messages received from their family, school, and social environment. Therefore, it is necessary to educate in sexual orientation/identity from different contexts, so that children grow up respecting differences in general and sexual diversity in particular. The results have practical implications and suggest the need to develop specific activities during childhood and adolescence that stimulate respect and tolerance for sexual diversity and activities within anti-bullying programs that address LGBT-phobic bullying/cyberbullying due to non-hetero-normative sexual orientation/identity. Among these programs, we can mention Cyberprogram 2.0, an intervention program to prevent cyberbullying that addresses bullying due to sexual orientation (e.g., open cyber-secrets, sexting, false promises...). The program has been evaluated experimentally, confirming a reduction in bullying and cyberbullying (Garaigordobil & Martínez-Valderrey, 2014; 2015; 2018).

Earnshaw and others (2018) observe an increase in interventions to address stigma-based bullying (against young LGBTQs, overweight or disabled youth...). Although many Spanish schools carry out anti-bullying activities, few programs contain specific strategies to reduce stereotypes and prejudices, which are needed to address stigma-based bullying. Future intervention proposals should include such strategies to address the bullying of stigmatized groups.

Finally, we underline that interventions to reduce stigmatization and bullying/cyberbullying of LGBTs should be multidirectional. Family education in tolerance for diversity plays a key role. School is a relevant context for anti-bullying activities that focus on vulnerable groups, promoting tolerance for diversity. A third axis of intervention should be society in general, as the norms and values it promotes condition

behavior. It is important to spread messages of tolerance through the mass media (TV, radio, press, Internet, social networks...), as these media are privileged tools to promote empathy and tolerance towards diversity in general and sexual diversity in particular, eliminating stereotypes and prejudices. However, clinical intervention should not be forgotten because of the risk of suicide of people suffering from LGBT-phobic bullying/cyberbullying.

Funding Agency

The study was funded by the Basque Government (PRE_2017_1_0017) and the I+D Network "Red de Investigación interdisciplinar para la PROMoción de la salud mental y bienestar EMocional en los jóvenes" (PROEM [Interdisciplinary Research Network for the PROMotion of mental health and EMotional well-being in Young People]) of the Ministry of Science, Innovation and Universities (PSI2017-90650-REDT).

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