



Cybervictimization, Offline Victimization, and Cyberbullying: The Mediating Role of the Problematic Use of Social Networking Sites in Boys and Girls

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ABSTRACT

The aim of the present study was to examine the mediating role of the problematic social networking sites use (PSNSU) in the relationship between both cybervictimization and offline victimization and cyberbullying in boys and girls. The sample consisted of 2,011 adolescents (50.67% boys and 49.32% girls), aged between 12 and 18 years old ($M = 14.17$, $SD = 1.47$), enrolled in schools in Andalusia, Spain. To examine this objective, moderated mediation model of the PROCESS macro was used. The results showed that both cybervictimization and offline victimization are positively related to cyberbullying directly and indirectly through PSNSU. Moreover, it was observed that boys victimized both online and offline demonstrated a higher involvement in cyberbullying, whereas girls reported a higher PSNSU. However, the PSNSU mediating effect was not moderated by gender. Finally, the results and their practical implications are discussed.

Cibervictimización, victimización *offline* y ciberbullying: el rol mediador del uso problemático de las redes sociales virtuales en chicos y chicas

RESUMEN

El objetivo del presente estudio fue examinar el papel mediador del uso problemático de las redes sociales virtuales (UPRSV) en la relación entre la cibervictimización, la victimización *offline* y el *ciberbullying* en chicos y chicas. Los participantes fueron 2,011 adolescentes (50.67% chicos y 49.32% chicas), con edades comprendidas entre los 12 y los 18 años ($M = 14.17$, $DT = 1.47$), escolarizados en centros educativos de Andalucía (España). Para examinar este objetivo se utilizó el modelo de mediación moderada de la macro de PROCESS. Los resultados obtenidos mostraron que la cibervictimización y la victimización *offline* se relacionan positivamente con el *ciberbullying* de manera directa e indirecta, a través del UPRSV. Además, se observó que los chicos victimizados tanto *online* como *offline* mostraron una mayor implicación en el *ciberbullying* mientras que las chicas mostraron un mayor UPRSV. Sin embargo, el efecto mediador del UPRSV no era moderado por el género. Finalmente se discuten los resultados y sus implicaciones prácticas.

School bullying is a problem of growing social and institutional concern due to the negative physical and psychological effects it has on adolescents (Crespo et al., 2017; León-Moreno et al., 2019). This type of violence has traditionally occurred in educational centers, but in recent years it has transcended the physical boundary to include the virtual environment. The new kind of peer aggression based on the use of new technologies (cyberbullying) has generated great interest among researchers and professionals (Estévez et al., 2019;

León-Moreno et al., 2020). Recent studies have found that victims of cyberbullying exhibit symptoms such as anxiety (Domas & Midgett, 2021), depression (Zhang et al., 2020), suicidal ideation (Iranzo et al., 2019), antisocial behavior (Garaigordobil, 2017), and decreased academic performance (Alzamil, 2021).

It should be noted that the use of electronic devices to carry out aggressive behavior implies that this type of peer aggression has its own characteristics that differentiate it from offline violence, such as

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the inability of a victim to flee from the violence in cyberspace, the anonymity of the aggressor, and the ability to disseminate content very quickly to a large number of viewers, who, in turn, can reproduce and forward it indefinitely (Ortega-Barón et al., 2019).

Another relevant aspect related to cyberbullying among peers is that a significant number of the aggressions carried out by adolescents in the virtual environment are perpetrated by cybervictims and offline victims (Garaigordobil & Machimbarrena, 2019). In other words, victims sometimes adopt the role of aggressor in cyberspace. The explanation could be that being the object of aggressive behavior by one or more peers can cause an increase in brooding and anger in the victim, increasing the likelihood of engaging in aggression as a way of “defending oneself” or “letting off steam” (Estévez et al., 2020; León-Moreno et al., 2019). In this regard, a victimized adolescent (whether aggressions occur offline or online) would find in the virtual environment the most favorable space to carry out this behavior as a “defensive” act (Brighi et al., 2019; Falla et al., 2020). In the online context, victims find a medium that they perceive as safer and more conducive to retaliate against their aggressors (Hsieh, 2020), hide their identity (Garaigordobil, 2017), and shift the balance of power (Katzer et al., 2009), thus avoiding social disapproval from observers (Cénat et al., 2019; Garaigordobil & Machimbarrena, 2019).

Problematic Social Networking Sites Use (PSNSU) as a Mediator

According to previous research, adolescents who are victims of online and offline violence show greater levels of PSNSU than non-victimized adolescents (Longobardi et al., 2020; Martínez-Ferrer et al., 2018). The explanation for this lies mainly in the fact that victimized adolescents spend more time and effort than their non-victimized peers on social networking sites (SNS) because they find in them an outlet to escape from unwanted moods and distress associated with particularly painful and stressful interpersonal experiences (Boniel-Nissim & Sasson, 2018). Specifically, victimized students find in SNSs a virtual support space beyond their geographical boundaries (Echeburúa & De Corral, 2010) where they can build their self-confidence (Boursier & Manna, 2018), develop close and intimate relationships (Tzavela et al., 2015), and feel connected to peers by belonging to a virtual community (Eggar & Amichai-Hamburger, 2017). The problem is that this coping strategy leads the victims to become overly preoccupied with SNSs and to devote a lot of time and energy, causing them to withdraw from other life cycle activities, and thus creating attitudes of dependence and a lack of control over their behaviors that negatively impact the normal development of their daily lives (Schou Andreassen & Pallesen, 2014; Zimmer-Gembeck et al., 2021).

In addition, it has been found that adolescents who spend more time connected to SNSs are more likely to engage in violent online behaviors (Baldry et al., 2019), such as cyberbullying (Craig et al., 2020; Kircaburun et al., 2019). This relationship could be explained by several theoretical frameworks, in particular the problem-behavior theory (Jessor, 1991). According to this theory, adolescents who engage in a risky or problematic activity are also likely to participate in other risky behaviors. In this regard, SNSs are linked to greater Internet use and, therefore, greater exposure to cyberspace risks (Machimbarrena et al., 2021). More specifically, the relationship between PSNSU and cyberbullying could be attributed to the general strain theory of Internet addiction and deviant behavior in social networking sites (SNS) (Mubarak & Quinn, 2019). This theory suggests that aggressive behavior in the virtual environment is associated with the stress and anxiety felt by adolescents caused by their excessive desire to connect to social networks and their inability to emotionally self-regulate, which could explain this relationship.

Consequently, victims would be more likely to develop a problematic use of SNSs than a non-victimized adolescent and engage in aggressive behavior towards their peers in the online environment. Nonetheless, little is known about the contribution of adolescents' problematic use of SNS (PSNSU) when examining the overlap and continuity of roles in both harassment dynamics in adolescents. Further research on this issue could provide useful information about transitions from offline to online contexts.

Gender as a Moderator

Previous studies have observed a greater use of SNSs as spaces for social interaction among girls (Park et al., 2019; Yang et al., 2018), whereas boys are more likely to use SNSs for entertainment, such as viewing videos or photos, and playing online games (Su et al., 2020). Moreover, studies have revealed that girls, compared to boys, are more vulnerable to the negative consequences (psychological and emotional problems) of different expressions of aggressive behavior both online and offline (Baldry et al., 2017; Zhang et al., 2020). These particularly stressful interpersonal experiences may, in turn, prompt girls to turn to these virtual spaces for emotional relief and support (Mariën et al., 2021). Thus, the association between peer victimization and problematic use of SNSs may be stronger in girls than in boys (Liu et al., 2020). Regarding cyberbullying, girls have been found to be more vulnerable to cyberbullying through social networks by denigrating comments about their appearance and by private or compromising photos within their peer group, while boys are more likely to be cyberbullied through online games (Gianesini & Brighi, 2015).

The Present Study

In view of the negative consequences of cyberbullying, we believe it is of theoretical and practical importance to explore those factors that may contribute to its emergence and increase among adolescents. Prior studies regarding PSNSU and its relations to offline and online victimization and cyberbullying are scarce and primarily focused on the direct relationship between PSNSU and cyberbullying or victimization. The mediating mechanism (i.e., how PSNSU connects offline and online victimization with cyberbullying) remains largely unknown. Therefore, the current study extends previous research by investigating whether offline and online victimization are associated with cyberbullying and whether the problematic use of social networking sites mediates this relationship. In addition, this study explored whether this mediation process was moderated by gender.

Thus, the present study had two aims. The first objective was to analyze a moderated mediation model in which PSNSU mediated the relationship between offline and cybervictimization and cyberbullying. The second aim of our study was to analyze the moderate effect of gender in direct and indirect relations between offline and cybervictimization, PSNSU, and cyberbullying. Based on the theoretical model (Figure 1a and 1b) we proposed the following hypotheses:

H1: Both cybervictimization and offline victimization will relate positively to cyberbullying.

H2: Both cybervictimization and offline victimization will be indirectly associated with cyberbullying, through involvement with PSNSU (mediating effect).

H3: Gender will moderate the mediating effect of PSNSU on the association between both cybervictimization and offline victimization, and cyberbullying. In particular, the indirect association will be greater for girls than for boys.

H4: Boys victimized both online and offline will report greater involvement in cyberbullying.

H5: Girls victimized both online and offline will report higher PSNSU.

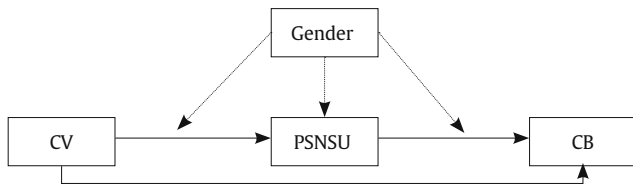


Figure 1a. Proposed Theoretical Model.

Note. CV = cybervictimization; PSNSU = problematic social networking sites use; CB = cyberbullying.

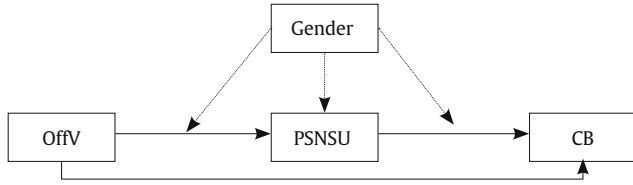


Figure 1b. Proposed Theoretical Model.

Note. OffV = offline victimization; PSNSU = problematic social networking sites use; CB = cyberbullying.

Method

Participants

The universe of the present study consisted of adolescents of both sexes between 12 and 18 years old. Data in this research were obtained from a sample of 2,011 adolescent students (50.67% boys and 49.32% girls) selected from 4 secondary schools (2 public and 2 state-subsidized) in Andalusia, Spain. Participants were aged between 12 and 18 years ($M = 14.17$, $SD = 1.47$) and were selected randomly. A sampling error of $\pm 2.5\%$ and a confidence level of 95% were established with an expected population variance of .50.

Measures

Cybervictimization Scale (CYB-VIC) was used (Buelga et al., 2012). This Likert-type scale is composed of 18 items with a response range from 1 (*never*) to 4 (*always*) that rates how frequently an adolescent has been subjected to aggression in the online environment (e.g., “They have hacked into my private account without my being able to do anything”). The Cronbach’s alpha obtained in the present sample was acceptable ($\alpha = .82$).

Peer Victimization Scale (Mynard & Joseph, 2000), adapted to Spanish by Martínez-Ferrer et al. (2018). It was used to assess offline victimization. It consists of 22 Likert-type items with a response range from 1 (*never*) to 4 (*always*) that evaluates how frequently the adolescent has been subjected to aggression in the offline environment. The scale consists of three dimensions: relational victimization (e.g., “A peer has told my secrets to others”), overt physical victimization (e.g., “A peer has beaten me up”), and overt verbal victimization (e.g., “A peer has insulted me”). The Cronbach’s alpha obtained in the present sample was acceptable ($\alpha = .92$).

Problematic Use of Virtual Social Networks Scale (Martínez-Ferrer et al., 2018). This Likert-type scale is composed of 13 items with a response range from 1 (*never*) to 4 (*always*) that evaluates problematic use of SNSs in adolescents (e.g., “I need to be connected to my social networks continuously”). The Cronbach’s alpha obtained in the present sample was acceptable ($\alpha = .87$).

Cyberbullying Scale (CYB-VIC) (Buelga & Pons, 2012). This Likert-type scale consists of 18 items with a response range from 1 (*never*) to 4 (*always*) that measures participation in aggressive behavior through the use of digital media (e.g., “I have sent or mani-

pulated photos or videos of someone without their permission”). The Cronbach’s alpha obtained in the present sample was acceptable ($\alpha = .81$).

Procedure

First, we contacted school administrators of the educational centers, explained the objectives and scope of the study, and asked for their participation on a voluntary basis. In addition, an informative meeting was held with the teaching staff in order to inform the entire educational community about the study. At the same time, a letter explaining the study was sent to families to obtain their consent for their children’s participation in the study. Once the authorizations from the educational centers to carry out the research and the active informed consent from families had been obtained, the battery of instruments was administered in two different sessions of approximately 45 minutes during school hours. Furthermore, this study complied with the ethical values required in research with human beings, respecting the fundamental principles included in the Declaration of Helsinki (1964) in its updates and in regulations in force: informed consent and right to information, protection of personal data and guarantees of confidentiality, non-discrimination, gratuity, and the possibility of abandoning the study at any stage.

Data Analyses

The average of missing data was 2.1% and never above 5% for an individual measure. The low level of missingness meant that it was not likely to bias the results, thus estimations were accurate to the expected values on the population (Graham, 2009). Missing values by scales or subscales were processed using the regression imputation method. In this method, rows in the data matrix are presumed to constitute a random sample of a normal multivariate population. Univariate outliers were detected via the exploration of standardized scores. Following the criteria provided by Hair et al. (2016), atypical values were those whose standardized scores had an absolute value above 4. For multivariate detection, Mahalanobis distance was computed. A multivariate outlier is identified if the associated probability at a Mahalanobis distance is .001 or less (Tabachnick & Fidell, 2007).

First, descriptive analyses (means and standard deviations) and bivariate correlations were calculated to explore all the variables included in the analysis. Furthermore, a *t*-test was performed to examine the differences of the study variables as a function of gender. Next, PROCESS macro (Model 59) (Hayes, 2013) was used to test the mediating effect of PSNSU on cybervictimization, offline peer victimization, and cyberbullying. Mediation was deemed to be statistically significant if confidence intervals did not include zero. In addition, the analysis of moderated mediation models was completed using Hayes’s PROCESS macro (Model 59). All analyses were conducted using SPSS 25.

Results

Preliminary Analyses

Table 1 outlines means, standard deviations, and zero-order correlations among all study variables separately for boys and girls. Findings revealed that cyberbullying, cyber victimization, offline victimization, and PSNSU were positively related for boys and girls. Next, an independent sample *t*-test was conducted to test differences among study variables according to gender. As shown in Table 1, boys reported higher levels in cyberbullying, whereas girls reported higher levels in cybervictimization and PSNSU.

Table 1. Correlations for Boys and Girls, Means, Standard Deviation, and *t*-test Results of Study Variables

	1	2	3	4	<i>M</i> (<i>SD</i>) Boys (<i>n</i> = 1,019)	<i>M</i> (<i>SD</i>) Girls (<i>n</i> = 992)	<i>t</i> -test	95% CI	<i>d</i>
1. CB	-	.48**	.29**	.39**	0.07 (1.13)	-0.07 (.83)	3.32**	.06, .23	0.15
2. CV	.51**	-	.62**	.34**	-0.08 (.95)	0.08 (1.04)	3.80***	-.25, -.08	0.17
3. OffV	.33**	.59**	-	.26**	0.03 (1.03)	-0.03 (.96)	1.38	-.02, .15	0.08
4. PSNSU	.28**	.23**	.16**	-	-0.08 (.98)	0.09 (1.01)	-3.95***	-.26, -.09	0.18

Note. CB = cyberbullying; CV = cybervictimization; OffV = offline victimization; PSNSU = problematic social networking sites use. Scores in the lower diagonal are from boys and scores from the upper diagonal are from girls.

d = Cohen's effect size; *d* ≤ .20 = small size.

p* < .01, *p* < .001.

Testing for Mediation Effect

The first aim of the study was to examine the mediating role of PSNSU in the relationship between both cybervictimization and offline peer victimization and cyberbullying. Results are presented in Table 2.

Regarding cybervictimization, Model 1 of Table 2 showed a positive and significant effect of both cybervictimization and PSNSU on cyberbullying ($\beta = .48, t = 24.31, p < .001$ and $\beta = .19, t = 9.38, p < .001$ respectively). Model 2 indicated that cybervictimization had a significant positive effect on PSNSU ($\beta = .29, t = 13.61, p < .001$). In Model 3, the mediating effect was examined. Results found that the direct effect of cybervictimization on cyberbullying was still significant ($\beta = .42, t = 21.03, p < .001$). Moreover, results of the bias-corrected percentile bootstrap method revealed that PSNS mediated the indirect association between cybervictimization and cyberbullying (effect = .05, *SE* = .01, 95% CI [.04, .07]). The mediation effect of PSNSU accounted for the 13.12% of the total effect of cybervictimization on cyberbullying (see Figure 2a).

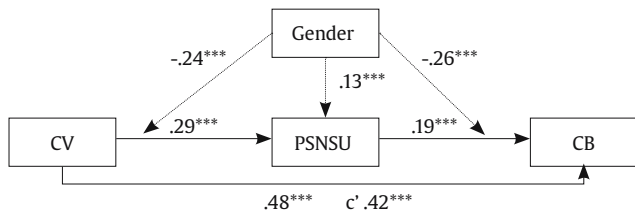


Figure 2a. Final Structural Model with Relation Coefficients and Statistical Significance.

Note. CV = cybervictimization; PSNSU = problematic social networking sites use; CB = cyberbullying; *c'* = direct effect of cybervictimization on cyberbullying.

Concerning offline peer victimization, Model 1 of Table 2 showed a positive and significant effect of both offline peer victimization and PSNSU on cyberbullying ($\beta = .27, t = 12.73, p < .001$ and $\beta = .26, t = 12.35, p < .001$ respectively). Model 2 revealed that offline peer victimization had a significant positive effect on PSNSU ($\beta = .20, t = 9.24, p < .001$). In Model 3, the mediating effect was examined. Results showed that the direct effect of cybervictimization on cyberbullying was still significant ($\beta = .32, t = 14.99, p < .001$). Furthermore, results of the bias-corrected percentile bootstrap method indicated that PSNS mediated the indirect association between cybervictimization and cyberbullying, (effect = .05, *SE* = .01, 95% CI [.04, .07]). The mediation effect of PSNSU accounted for the 16.25% of the total effect of cybervictimization on cyberbullying (see Figure 2b).

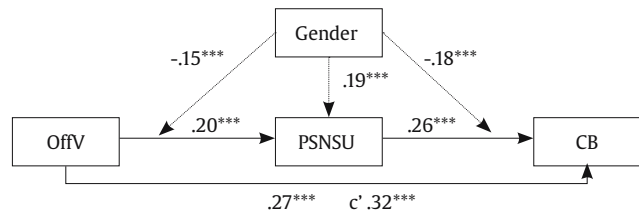


Figure 2b. Final Structural Model with Relation Coefficients and Statistical Significance.

Note. OffV = offline victimization; PSNSU = problematic social networking sites use; CB = cyberbullying; *c'* = direct effect of offline victimization on cyberbullying.

Testing for Moderated Mediation

The second aim was to examine whether gender would moderate direct and indirect relations between cybervictimization/offline

Table 2. Mediating Effect of PSNSU on Cyberbullying

Predictors (IV)	Model 1 (DV: CB)			Model 2 (DV: PSNSU)			Model 3 (DV: CB)		
	β	<i>t</i>	95% CI	β	<i>t</i>	95% CI	β	<i>t</i>	95% CI
IV: CV									
CV	.48	24.31***	.38, .46	.29	13.61***	.25, .33	.42	21.03***	.38, .46
PSNSU	.19	9.38***	.15, .23						
<i>R</i> ²	.26			.08			.48		
<i>F</i>	352.17***			185.22***			590.82***		
IV: OffV									
OffV	.27	12.73***	.22, .31	.20	9.24***	.16, .24	.32	14.99***	.28, .36
PSNSU	.26	12.35***	.22, .30						
<i>R</i> ²	.16			.04			.10		
<i>F</i>	197.02***			85.43***			224.63***		

Note. CB = cyberbullying; CV = cybervictimization; OffV = offline victimization; PSNSU = problematic social networking sites use; IV = independent variable; DV = dependent variable.

****p* < .001.

victimization and cyberbullying through PSNSU. Results are reported in Table 3. To analyze the moderated mediation, we estimated parameters for two regression models with Hayes' (2013) PROCESS macro (Model 59) and 95% bias-corrected bootstrapped confidence interval (CI) based on 10,000 bootstrap samples at values of one standard deviation (SD) below the mean, at the mean, and one SD above the mean.

We tested whether gender moderated (a) the relation between cybervictimization/offline victimization and cyberbullying, (b) the relation between cybervictimization/offline victimization and PSNSU, and (c) the relation between PSNSU and cyberbullying.

Regarding cybervictimization, we analyzed gender as a moderator on the associations (a) between cybervictimization and cyberbullying (Model 1), (b) between cybervictimization and PSNSU (Model 2), and (c) between cybervictimization and cyberbullying after controlling for PSNSU (Model 3). Specifications of these three models can be seen in Table 3. The association (a) between cybervictimization and cyberbullying, and/or (b) between cybervictimization and PSNSU was moderated by gender.

Table 3. Moderated Mediating Effect of Gender on Cyberbullying

Predictors (IV)	Model 1 (DV: CB)			Model 2 (DV: PSNSU)		
	β	<i>t</i>	95% CI	β	<i>t</i>	95% CI
IV: CV						
Gender	-.26	-6.78***	-.33, -.18	.13	-2.89**	.04 - .21
CV	.80	12.65***	.68, .92	.15	2.15*	.02 - .28
PSNSU	.19	3.03**	.07, .31			
Gender x CV	-.24	-6.13***		.09	2.07*	.01 - .17
Gender x PSNSU	.01	0.24				
<i>R</i> ²	.29			.09		
<i>F</i>	163.72***			66.48***		
IV: OffV						
Gender	-.18	-4.36***	-.26, -.10	.19	4.35***	.10 - .27
OffV	.47	7.44***	.35, .60	.02	.30	-.11 - .15
PSNSU	.27	4.07***	.14, .40			
Gender x OffV	-.15	-3.53***	-.23, -.07	.13	2.91***	.04 - .21
Gender x PSNSU	.00	.05	-.08, .08			
<i>R</i> ²	.18			.05		
<i>F</i>	86.37***			37.94***		

Note. CB = cyberbullying; CV = cybervictimization, OffV = offline victimization; PSNSU = problematic social networking sites use; IV = independent variable; DV = dependent variable.

****p* < .001.

As shown in Table 3, results of Model 1 indicated that cybervictimization and PSNSU were positively related to cyberbullying ($\beta = .80, p < .001, \beta = .19, p < .01$, respectively), whereas gender was negatively related to cyberbullying ($\beta = -.26, p < .01$). It was also observed that there was a moderation effect of cybervictimization and gender ($\beta = -.24, p < .001$). Model 2 revealed that the association between cybervictimization and PSNSU and between gender and PSNSU were significant ($\beta = .15, p < .05, \beta = .13, p < .05$, respectively). In addition, the relationship between cybervictimization and PSNSU was moderated by gender ($\beta = .09, p < .05$). However, the association between PSNSU and cyberbullying was not moderated by gender ($\beta = .01, p = .81$).

With regard to the moderation effects, first we plotted predicted cyberbullying and cybervictimization separately for boys and for girls (Figure 3a) as well as predicted PSNSU and cybervictimization separately for boys and girls (Figure 3b). As presented in Figure 3a, simple slope tests indicated that for boys higher levels of cybervictimization were related to higher levels of cyberbullying than for girls ($\beta_{\text{boys}} = .56, t = 19.57, p < .001, 95\% \text{ CI } [.50, .61], \beta_{\text{girls}} = .32, t = 11.57, p < .001, 95\% \text{ CI } [.26, .37]$).

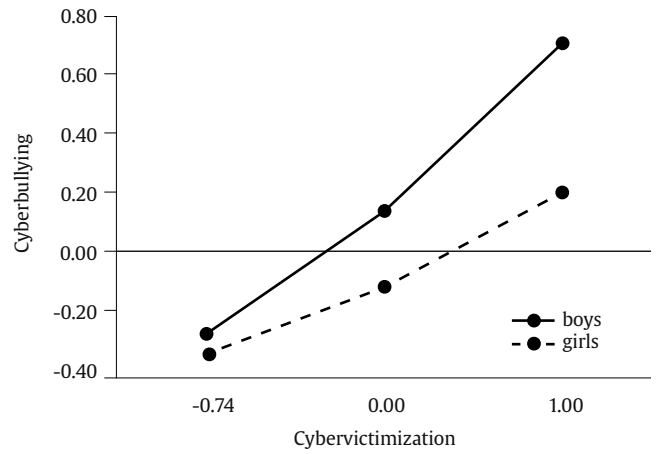


Figure 3a. Moderating Role of Cybervictimization in the Effects of Cyberbullying.

As presented in Figure 3b, by contrast, higher levels of cybervictimization were related to higher levels of PSNSU for girls than for boys ($\beta_{\text{boys}} = .24, t = 7.56, p < .001, 95\% \text{ CI } [.18, .30], \beta_{\text{girls}} = .33, t = 11.19, p < .001, 95\% \text{ CI } [.27, .38]$). The bias-corrected percentile bootstrap found that the indirect effect of cybervictimization on cyberbullying through PSNSU was not moderated by gender (effect = .02, *SE* = .02, 95% CI [-.01, .05]). Next, we examined the conditional indirect effects of cybervictimization on cyberbullying by gender.

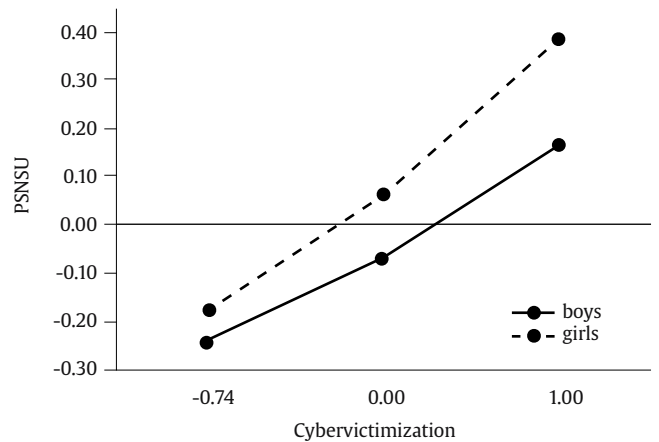


Figure 3b. Moderating Role of Cybervictimization in the Effects of PSNSU.

Concerning offline peer victimization, we assessed gender as a moderator on the associations (a) between offline victimization and cyberbullying (Model 1), (b) between offline victimization and PSNSU (Model 2), and (c) between offline victimization and cyberbullying after controlling for PSNSU (Model 3). If the association (a) between offline victimization and cyberbullying, and/or (b) between offline victimization and PSNSU was moderated by gender, the moderated mediation model was established (Hayes, 2013).

Results of Model 1 indicated that offline victimization and PSNSU were positively related to cyberbullying ($\beta = .47, p < .001, \beta = .27, p < .01$, respectively), whereas gender was negatively related to cyberbullying ($\beta = -.18, p < .01$). A moderation effect of offline peer victimization and gender ($\beta = -.15, p < .001$) was also found. Model 2 showed that gender was positively related to PSNSU ($\beta = .19, p < .01$), whereas offline peer victimization was not a significant predictor of PSNSU ($\beta = -.02, p = .77$). However, the relationship between offline peer victimization and PSNSU was moderated by gender ($\beta = -.13, p < .001$).

With respect to the moderation effects, for descriptive purposes, we plotted predicted cyberbullying and offline peer victimization separately for boys and for girls (Figure 4a). Simple slope tests indicated that for boys higher levels of offline peer victimization were related to higher levels of cyberbullying than for girls ($\beta_{\text{boys}} = .33$, $t = 11.75$, $p < .001$, 95% CI [.27, .38], $\beta_{\text{girls}} = .18$, $t = 5.78$, $p < .001$, 95% CI [.12, .24]).

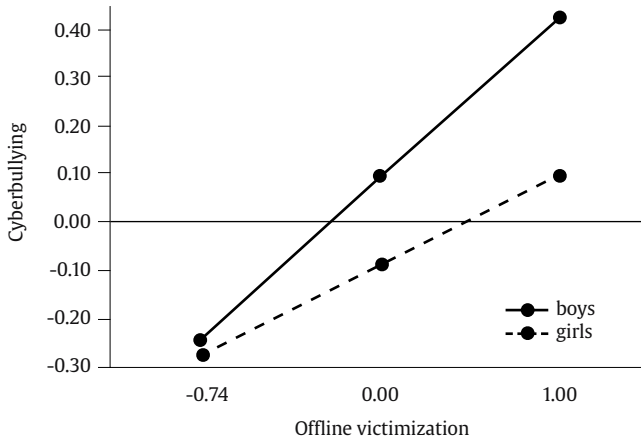


Figure 4a. Moderating Role of Offline Victimization in the Effects of Cyberbullying.

Next, we plotted predicted PSNSU and offline victimization separately for boys and girls (Figure 4b). Simple slope tests revealed that for girls higher levels of offline peer victimization were related to higher levels of PSNSU than for boys ($\beta_{\text{boys}} = .15$, $t = 4.99$, $p < .001$, 95% CI [.09, .20], $\beta_{\text{girls}} = .27$, $t = 8.52$, $p < .001$, 95% CI [.21, .34]).

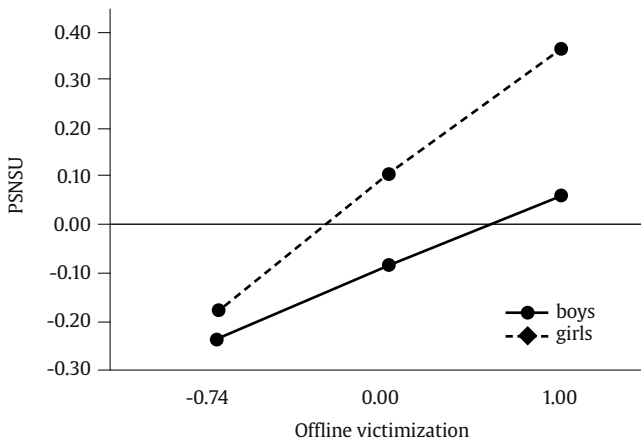


Figure 4b. Moderating Role of Offline Victimization in the Effects of PSNSU.

Results of the bias-corrected percentile bootstrap found that the indirect effect of cybervictimization on cyberbullying through PSNSU was not moderated by gender (effect = .03, $SE = .02$, 95% CI [.00, .07]).

Discussion

The purpose of this study was to examine the mediating role of PSNSU in the relationship between both cybervictimization and offline victimization and cyberbullying. We further explored the moderating effect of gender on these relationships. The results revealed that there is a direct and positive relationship between

both cybervictimization and offline victimization, and cyberbullying, thus confirming the first hypothesis. These findings are in line with findings of other studies revealing that a significant number of students who experienced peer victimization both offline and online engage in cyberbullying as a response to this situation (Estévez et al., 2020; Walters & Espelage, 2018).

Similarly, when episodes of violence occur in both online and offline environments, PSNSU is higher. In this regard, and consistent with the hypothesis of the Social Compensation Theory (Vandebosch & Van Cleemput, 2009), various authors have indicated that students may tend to engage in PSNSU as a strategy, or as a response to avoid negative feelings, such as stress, anxiety, and psychological distress associated with these painful experiences (Boniel-Nissim & Sasson, 2018; Gini et al., 2019). It is also possible that SNSs are, in turn, a tool for seeking support beyond their geographical boundaries and an opportunity to create new friendship networks (Martínez-Ferrer et al., 2018). Nevertheless, some authors have pointed out that SNSs do not always provide a real solution to psychological and emotional problems and, in many cases, may even contribute to greater stress and anxiety (Machimbarrena et al., 2019) because the abusive situation does not cease (Wójcik et al., 2021).

Likewise, a positive association was found between PSNSU and involvement in cyberbullying. These findings are consistent with those obtained in previous studies where the same relationships were observed (Craig et al., 2020; Kircaburun et al., 2019). However, the results of the present study show a deeper analysis of these relationships, to the extent that PSNSU is observed to be a mediating variable between both cybervictimization and offline victimization and involvement in cyberbullying. This result allows us to confirm the second hypothesis. This finding could be explained on the basis of the Strain Theory proposed by Agnew (1992), whereby in cyberbullying the main source of strain is produced by a previous experience of victimization. Thus, students who have experienced victimization may look to SNSs as a space in which to avoid negative emotions, such as anger, stress, frustration, and anxiety. Nonetheless, according to Mubarak & Quinn (2019), their excessive desire for connection may increase these negative emotions, resulting in their involvement in cyberbullying in response. The fact that both forms of peer violence use this social space to engage in cyberbullying seems to support studies suggesting that cybervictimization is not an isolated event but an extension of offline victimization (Beltrán-Catalán et al., 2018; Khong et al., 2020).

In the analysis of the moderating effect by gender, it was observed that, as predicted, the relationship between both cybervictimization and offline victimization and cyberbullying is stronger for boys than for girls (hypothesis 4). Furthermore, it was confirmed that girls reported higher PSNSU when they are victimized in both online and offline domains (hypothesis 5). However, in contrast to expectations, gender did not moderate the associations between both cybervictimization and offline victimization and cyberbullying through PSNSU, so the third hypothesis is not confirmed. These differences may be attributed to gender roles in adolescents (Feijóo et al., 2021) because girls have a greater interest than boys in maintaining friendships and resolving conflicts which may explain the differences in how they cope with online and offline victimization (Ging & O'Higgins Norman, 2016).

Prior studies have found that victimized girls find in SNSs a space for immediate peer support, such as advice and information on how to deal with these painful experiences (Marién et al., 2021), which seem to contribute to a greater vulnerability to problematic use of virtual social networks, in addition to the sense of immediacy provided by SNSs and the possibility of communicating with their peers in this uninterrupted space and time (Marién et al., 2021). Other studies have also demonstrated that empathy and pro-sociality are the main assets of girls' virtual status and reputation (Fondevila et al., 2020; González & Maroto, 2018), which could explain why they tend to avoid aggressive behavior when victimized. These findings

could also be linked to differential Internet use in girls and boys. It has been observed that girls were more cybervictimized through SNSs, and boys through online games (Gianesini & Brighi, 2015). Future research should explore whether problematic use of online games, more present in boys than in girls, is a mediating variable between both cybervictimization and offline victimization and cyberbullying.

Nevertheless, the findings of this study have some limitations that need to be addressed. In this regard, our study included measurements carried out at a single point in time, making it impossible to establish causal relationships between the study variables. Similarly, future research should introduce a multi-informant and multi-method perspective that includes the views of the educational community and the family regarding PSNSU (Beltrán-Catalán et al., 2018). Moreover, further studies should investigate parental supervision strategies that foster the responsible use of SNSs (Boniel-Nissim & Sasson, 2018). Despite these limitations, and to the best of our knowledge from the scientific literature consulted, there are no previous studies that explore the mediating relationship of PSNSU in cybervictimization and cyberbullying dynamics (Kircaburun et al., 2019). From an applied point of view, the findings of this study provide new approaches for intervention and prevention of PSNSU and its links with cyberbullying. On the one hand, they highlight that PSNSU increases cyberbullying in students victimized in both online and offline environments. Therefore, it is recommended to promote good practice programs in using Internet and SNSs in order for adolescents to develop the healthy use of these communication tools and identify their associated risks. On the other hand, the results of this study underline the importance of considering the gender differences obtained so that more specific prevention and intervention programs could be designed. Based on our results, we suggest the need to support a critical attitude towards the normative model of masculinity that justifies and legitimizes social interactions with a certain violent component. Likewise, it is important for girls to feel that they have a virtual support network. Fostering activities that involve offline interactions could contribute positively to the reduction of PSNSU.

Conflict of Interest

The authors of this article declare no conflict of interest.

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