

Cyberbullying, bullying y comportamiento antisocial en adolescentes chilenos

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Cyberbullying, bullying and antisocial behavior among chilean adolescents

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ABSTRACT

Cyberbullying is a phenomenon that affects teenagers around the globe. Studies suggest that it has a negative impact on both victims and aggressors, becoming a public health concern. Previous studies have sought to define its predictors; however, most studies have not assessed the relationship between cyberbullying and traditional bullying or other types of aggression. Herein, we aimed to assess the association between antisocial behaviors and traditional bullying as forms of aggression that could predict cyberbullying in victims and perpetrators. A total of 791 adolescents from Santiago, Chile, were included in our study; mean age of 13.57 years old, 46.06% female. We used the structural equations model to test our model. Our results show a good fit of the model, showing a relation between antisocial behaviors and bullying, but only for the perpetrator. Bullies were associated with the roles of cyberbullying victim and cyberbullying perpetrator. Bullying victims were only associated with cyberbullying victims. Our results confirm the relation between different types of aggressive behavior, particularly for perpetrators, which could account for a unique dynamic for bullying and cyberbullying perpetrators. Prevention programs should explore more comprehensive interventions aimed at adolescents and promote a better understanding of this type of aggression.

Keywords: cyberbullying, bullying, maladjustment, adolescents, Chile.

RESUMEN

El ciberacoso es un fenómeno que afecta a los adolescentes de todo el mundo. Los estudios sugieren que tiene un impacto negativo tanto en las víctimas como en los agresores, convirtiéndose en un problema de salud pública. Estudios previos han buscado definir sus predictores; sin embargo, la mayoría de los estudios no han evaluado la relación con el acoso tradicional u otros tipos de agresión. En este documento, nuestro objetivo fue evaluar la asociación entre los comportamientos antisociales y el acoso tradicional como formas de agresión que podrían predecir el acoso cibernético, tanto para las víctimas como para los perpetradores. En nuestro estudio se incluyó a 791 adolescentes de Santiago de Chile, con una edad media de 13,57 años, 46,06% mujeres. Usamos el modelo de ecuaciones estructurales para probar nuestro modelo. Nuestros resultados muestran un buen ajuste del modelo, mostrando una asociación entre comportamientos antisociales y bullying, pero solo para el perpetrador. Los acosadores se asociaron con los roles de víctima de acoso cibernético y agresor de acoso cibernético. Las víctimas de acoso escolar solo se asociaron a víctimas de acoso cibernético. Nuestros resultados confirman la asociación entre diferentes tipos de comportamiento agresivo, particularmente para los perpetradores. Esto podría explicar una dinámica única para los perpetradores de acoso y ciberacoso. Los programas de prevención deben explorar intervenciones más integrales dirigidas a los adolescentes y promover una mejor comprensión de este tipo de agresión.

Palabras clave: cyberbullying, acoso escolar, inadaptación, adolescentes, Chile.

Introduction

Cyberbullying is a type of aggression based on the use of technologies. It is defined as an intentional act of aggression executed by a certain group or individual against a victim that cannot protect itself easily. This aggression occurs persistently over time and via electronic devices or platforms (Smith *et al.*, 2008).

Previous studies have demonstrated that being involved in traditional bullying, either as a victim or as a bully, is a significant predictor for cyberbullying (e. g. Kowalski, Giumetti, Schroeder, & Lattanner, 2014). However, these studies have not assessed other potential predictors, such as antisocial behavior in adolescents. Herein, we sought to determine the impact of antisocial behavior as a predictor for bullying in Chilean adolescents. Additionally, in the same model, we assessed bullying as a predictor of cyberbullying for both victims and perpetrators.

Cyberbullying

Cyberbullying can be defined as a repetitive and intentional pattern of aggression through computers, cellphones, or another electronic device (Hinduja & Patchin, 2009; Kowalski, Limber, & Agatston, 2012a; Smith *et al.*, 2008). Other characteristics of cyberbullying include *anonymity* and *disinhibition*. The former means that aggressors can hide their identities by using pseudonyms, and the latter implies there is no adult supervision in virtual spaces, and therefore, adolescents are incapable of assessing the damage they inflict upon others while not seeing their victim face to face. Third, cyberbullying is characterized by its *viral nature*, meaning that offensive content can be rapidly seen by a massive amount of people within minutes (Hinduja & Patchin, 2009).

Several authors have pointed at the similarities and differences between traditional bullying and

cyberbullying. However, some others, like Olweus (2012), have suggested that both can be part of the same conceptual frame, given their degree of association. Still, some authors have postulated these two phenomena display differences that could mark distinctive aspects of their comprehension (Patchin & Hinduja, 2011; Varela, Pacheco, & Zimmerman, 2018). For example, *anonymity* (Kowalski & Limber, 2007) hinders the identification of perpetrators, leaving victims with fewer alternatives to stop or report cyberbullying. Moreover, traditional bullying occurs during school time, whereas cyberbullying may occur at any moment (Kowalski, Limber, & McCord, 2019).

Different theoretical models have been used to explain the emergence of cyberbullying within the school context. Among the most recent explanatory models is the syndemic framework model of analysis, which aims to explain this phenomenon through the simultaneous consideration of multiple risk factors that interact synergistically, negatively affecting the well-being and mental health of those who suffer it (Tsai, 2018). On the other hand, the Barlett Gentile model of cyberbullying (Barlett & Gentile, 2012) explains how continuous exposure to certain stimuli contributes to the learning of cognitive structures, attitudes, and beliefs that eventually predict behavior. In this sense, the continuous experience of cyberbullying would predict the future perpetration of this type of behavior.

Several authors have speculated that taking part in offline bullying or suffering victimization at school could serve as predictors for cyberbullying for both victims and aggressors (Athanasides, Baldry, Kamariotis, Kostouli, & Psalti, 2006; Cappadocia, Craig, & Pepler, 2013). More specifically, being involved in traditional bullying, breaking the rules, frequent online social interaction (Sticca *et al.*, 2012), the presence of antisocial behavior, and the

limited prosocial peer interaction (Cappadocia *et al.*, 2013) are longitudinal risk factors for being a cyberbully. Moreover, adolescents that report higher levels of emotional and behavioral difficulties display a tendency towards bullying and cyberbullying, either as a victim or an aggressor (Sánchez-García, Pérez de Albéniz, Paino, & Fonseca-Pedrero, 2018). Recent studies have postulated several predictors for cyberbullying (Kowalski *et al.*, 2014). For example, being an aggressor has been associated with: males, “offline” harassment, externalizing and internalizing disorders, antisocial personality, a negative school climate, and also being a victim of cyberbullying (Guo, 2016; Lee, 2016; Lee & Shin, 2017; Ronis & Slaunwhite, 2017). On the other hand, victims are associated with the use of social media (Lee & Shin, 2017), being a victim of traditional offline bullying (Guo, 2016), and being females. Authors speculate this is derived from the interaction among women, which tends to be more emotional compared to the interaction among men (Ronis & Slaunwhite, 2017). These aspects together could explain the specific characteristics for perpetrators of bullying and cyberbullying; this is relevant as it provides evidence not only for understanding the specific dynamics of cyberbullying but also for designing prevention and intervention programs aimed particularly at this type of aggression.

Current cyberbullying prevalence calls for a public response, especially in those contexts more affected by this behavior. A recent systematic review by Brochado, Soares, and Fraga (2017) that included 159 studies (mostly from North America and Europe) reports a prevalence that fluctuates between 1% and 61.1%, while aggression reports vary between 3 and 39%. In Latin America, studies have indicated that the frequency of cyberbullying tends to decrease with age, being more prevalent between

13 and 16 years old. In addition, it has been observed that being a victim of cyberbullying is more prevalent in females than in males (Yudes-Gómez *et al.*, 2018). Likewise, a bibliometric study that included 234 studies on bullying and cyberbullying in Latin America found a prevalence of cyberbullying ranging from 2.5% to 42.5% (Herrera-López *et al.*, 2018). In turn, a systematic review by Garaigordobil *et al.* (2018) on bullying and cyberbullying in Latin America found a prevalence ranging from 3.5% to 17.5% for cybervictim and from 2.5% to 58% for cyberbully. In this line, in a study conducted in Argentina, which included 898 high school students found that 6% of these indicated being traditional aggressor, 8% being cyber aggressor and 4% perpetrating both forms of aggression (Resett & Gamez-Guadix, 2017).

In Chile, the First National Survey on Polyvictimization (Primera Encuesta Nacional de Polivictimización, in Spanish) involved a total of 19,867 students from 6th to 11th grade and found that 8% of the adolescents suffered nine or more types of aggressions; they are considered poly-victims. Within this group, a 69% reported suffering cyberbullying (Consejo Nacional de la Infancia, 2018; Ministerio de Educación, Centro de estudios Mineduc, 2018). These prevalence rates are consistent with previous reports in Chile (Varela, Pérez, Schwaderer, Astudillo, & Lecannelier, 2014). Accordingly, the Chilean Ministry of Education indicates that cyberbullying complaints increased by 63% in the 2017-2018 period (Ministerio de Educación, Centro de Estudios Mineduc, 2018). The increase of cyberbullying is of concern given its relationship with the appearance of suicidal thoughts or attempts (Hinduja & Patchin, 2009; Zaborskis, Ilionsky, Tesler, & Heinz, 2019). Actually, a recent study by Kim, Walsh, Pike, and Thompson (2019) confirmed this association in a cohort of US students that included 8th-10th graders.

Over the last 40 years, cyberbullying has been an active topic of interest (Brochado *et al.*, 2017; Zych, Farrington & Ttofi, 2019); this includes studies in Chile (Varela, 2013; Varela, Zimmerman, Ryan, & Stoddard, 2017). However, several aspects, such as the relationship between traditional bullying and other risk behaviors among adolescents, as significant predictors remain to be fully elucidated (Zych *et al.*, 2019).

Being a victim or perpetrator of cyberbullying has been shown to have negative consequences for the healthy development of children and adolescents. A meta-analysis of 22 studies that included 47836 adolescents with a mean age of 13.68 found that results from longitudinal studies indicate that being a victim of cyberbullying can lead to subsequently becoming a cyberbully. In the same study, it was also found that being a victim of cyberbullying increased the possibility of suffering from mental health problems, such as anxiety and depression, as well as greater difficulties for peer relationships (Lozano-Blasco *et al.*, 2020). Similarly, a study conducted in Colombia, which included data from 1462 adolescents between 13 and 17 years of age, found that being a victim of cyberbullying was associated with a higher risk of suffering post-traumatic stress disorder, higher lifetime cigarette consumption, and poorer health conditions (Cassiani-Miranda *et al.*, 2021). Likewise, a study conducted in Brazil, which included 454 adolescents, found that both being a victim of cyberbullying and cyberbullying aggressor was associated with a higher prevalence of depressive symptomatology (Wendt *et al.*, 2018).

Bullying

Bullying can be considered a particular form of antisocial behavior that has negative consequences for victims, perpetrators, and the whole school community (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Due *et al.*, 2005; Varela

et al., 2017). Bullying involves a negative, intentional and repetitive behavior towards another individual, intending to inflict damage. Commonly, the target of this aggression is a person in a position of disadvantage, or there is an asymmetric relationship between victim and perpetrator (Olweus, 1998; Zych *et al.*, 2019).

Worldwide, bullying is a growing concern, given its negative consequences. In Latin America, results from the Global School-based Student Health Survey (GSHS), in which more than 25,000 students from 15 countries participated, found that between 17% and 39% of the participants reported having been victims of bullying in the last month. Specifically, these rates ranged from 16% to 41% in girls and 17% to 36% in boys (McClanahan *et al.*, 2014). In Chile, a recent assessment indicated that 29% of adolescents (7th to 12th graders) had suffered bullying from peers over the last year (Consejo Nacional de la Infancia, 2018). Throughout the literature, authors have postulated several predictors for bullying (Álvarez-García, García, & Núñez, 2015; Cook, Williams, Guerra, Kim, & Sadek, 2010; Swearer & Hymel, 2015). In particular, studies have explored the relationship between bullying, aggression, and antisocial behavior. Indeed, bullies tend to display traits of aggressive personality (Nocentini, Menecini, & Salmivalli, 2013). Moreover, antisocial behavior in 8-10 years old predicts bullying at the age of 14 (Farrington & Baldry, 2010). A related study found that externalizing behavior in childhood is associated, among other factors, with being a bully (Natesan, Mitchell & Glover, 2018). A 3-year longitudinal study by Nocentini *et al.* (2013) that involved 515 adolescents found that students that displayed an aggressive profile at the beginning of the study tended to develop bullying behaviors over time. Similarly, a study by Fanti & Kimonis (2012) used the Achenbach (1991) self-reported scale and found an association between problem behavior, personality

traits, and the development of bullying over time in adolescents. In Latin America, Cardozo and colleagues (2017) conducted a study in Córdoba (Argentina) and identified that juvenile and antisocial behaviors are significant predictors for both bullying and cyberbullying.

Studies have shown that bullying has negative effects in various areas of the lives of children and adolescents in the immediate, short, and long term (Sigurdson *et al.*, 2015). Specifically, among other elements, negative effects on mental health have been found, with higher levels of depression and suicide rates (Fullchange & Furlong, 2016) as well as poorer physical health and lower academic achievement (Wolke & Lereya, 2015). In Latin America, a study that included data from the Third Regional Comparative and Explanatory Study (TERCE), in which 15 countries of the region participated, found that being a victim of bullying had a significant impact on academic achievement, showing significantly lower levels in mathematics and reading skills than that of young people who had not been victims of aggression (Delprato *et al.*, 2017). In another study, which included data from 5 Latin American countries, it was found that although the prevalence of bullying varied between countries, in all of them, there was a significant association between suicidal ideation and the presence of negative behaviors with having been a victim of bullying (Romo & Kelvin, 2016).

Although the association between antisocial behavior and bullying among adolescents is well recognized, only a few studies have simultaneously assessed this association for both bullying and cyberbullying among Chilean adolescents. They may be relevant to define unique cyberbullying attributes.

Antisocial behavior

Antisocial behavior results from the inability of an individual to respect others (Frick, 1998)

and often emerges in childhood and adolescence (Eleni & Giotsa, 2018; Silva dos Santos *et al.*, 2019). This behavior can also be understood as a set of behaviors that go against the norm or pre-established rules (Gaik, Abdullah, Elias & Uli, 2010). Antisocial actions can include assault, vandalism, crime, or other actions that do not comply with social norms (Hawkins, Catalano & Miller, 1992) and can occur in different contexts (family, neighborhood, school). These behaviors can vary in severity, chronicity, and frequency; they range from criminal to non-criminal actions and may also include aggressive actions, lies, and alcohol or substance abuse (Burt, Brent Donnellan, Slawinski, & Klump, 2015; Rivera & Cahuana, 2016).

In the school context, antisocial behaviors can be aggressions toward other students or any member of school community, like teachers or staff (Espelage *et al.*, 2013). They can also appear as damage to school property, breach of rules, truancy, and school dropout (Espelage *et al.*, 2013; Garaigordobil, 2005). During childhood and adolescence, antisocial behavior is associated with disruptive or impulsive behavior, robbery, vandalism, physical & psychological aggressions, bullying, running away from home, and missing classes at school (Garaigordobil, 2017). Reinke and Herman (2002) postulate that these children are commonly diagnosed with externalizing/internalizing behavioral disorders such as negativist defiant disorder (ODD), attention deficit hyperactivity disorder (ADHD), or dissocial behavior disorders.

The evidence shows that antisocial behaviors affect both the environment of the individual who commits them as well as their own psychosocial development, presenting greater vulnerability than other subjects to various risk factors (Dishion & Patterson, 2016). Likewise, diverse studies have found that involvement in antisocial behaviors at an early age and their

persistence for long periods is associated with the continuity of these actions in adulthood with manifestations of even greater severity (Dishion & Patterson, 2016; Farrington, 1995, 2005; Sanabria & Uribe Rodríguez, 2009).

Cyberbullying, bullying and antisocial behaviors

Regarding the relationship between the three variables under study, it is necessary to mention first that the relationship between bullying and cyberbullying has been extensively investigated (e. g. Li, 2007; Juvonen & Gross, 2008; Raskauskas & Stoltz, 2007; Wang *et al.*, 2019). Previous studies have found that involvement in traditional bullying, both in the role of aggressor and victim, significantly predicts involvement in cyberbullying (Kowalski *et al.*, 2014). Other studies have also found positive associations between being a cyber victim and being victimized in the school context (Guo, 2016; Juvonen & Gross, 2008; Raskauskas & Stoltz, 2007). In a Canadian sample, Li (2007) found that perpetrators and victims of traditional bullying are more likely to become cyberbullies and cyber victims than those who are not engaged in bullying dynamics at school. Also, a more recent study in Taiwan found that 41.5% of students involved in bullying are engaged in cyberbullying as well, while 48.7% of cyberbullying victims are victims of bullying at their schools (Wang *et al.*, 2019). As Ybarra and Mitchell (2004) point out, for some victims of bullying (around 56% in their study), cyberbullying would be an extension of the aggression they experience in the school context, while others (between 40% and 50 %) would be harassed only by virtual media. However, subsequent studies found that 64% of students are bullied only in virtual contexts (Ybarra, Diener-West, & Leaf, 2007).

As pointed, traditional bullying has been postulated as a significant predictor of cyberbullying (Guo, 2016). In the US, Kowalski, Morgan, and Limber (2012b) assessed this association in a sample of 4,531 6th-12th graders. This study found a significant association, especially in women. In Chile, Varela, Schwaderer, Cárcamo, and Oyanedel (2012) examined the third national school-violence survey (ENVAE, 2019), which included 49,637 7th-12th graders and found that 87.8% had been victims of cyberbullying and were also victims of traditional offline bullying ($r = .18$). Moreover, 63.2% of cyberbullies were also bullies at their schools ($r = .21$). The association of bullying and cyberbullying in Chilean adolescents is evidently a relevant topic; however, it is also important to consider other potential predictors.

For example, there is a significant relationship between engaging in bullying/cyberbullying (as a victim or perpetrator) and a higher prevalence of antisocial behavior (Corrado & McCuish, 2015; Mitchell, Ybarra, & Finkelhor, 2007; Sticca, Ruggieri, Alsaker, & Perren, 2012). Interestingly, using a large sample of 3,026 Spaniard adolescents, Garaigordobil (2017) demonstrated that this significant association not only involves victims and perpetrators but also bullying bystanders. Also, Wallinius *et al.* (2016) examined 18-25 years old Swedish adolescents and found a high association between being a bully, skipping classes, and higher levels of antisocial behavior.

Hence, we could hypothesize that adolescents that display antisocial behaviors and traditional bullying will likely initiate behaviors leading to cyberbullying. Therefore, cyberbullying does not occur in an isolated way. Instead, it seems to be a part of a set of antisocial behaviors that represent a novel approach to use power in a

relationship, but in a virtual context (Cappadocia *et al.*, 2013; Pepler *et al.*, 2006). Although childhood aggressive and antisocial behaviors usually decrease over time, these behaviors tend to increase in a subgroup of adolescents, eventually leading to more serious forms of violence (Van Ryzin & Dishion, 2012). Despite this, only a few studies have examined the association of antisocial behaviors with bullying and cyberbullying in adolescents. Consequently, here we examined the association among antisocial behaviors, traditional bullying, and the dynamics of cyberbullying in urban Chilean adolescents.

Based on the previous revision, the research question that guides this work is: What is the relationship between antisocial behaviors and traditional bullying experiences and between these experiences and cyberbullying in both bullies and victims?

So, our hypotheses are: (1) Antisocial behaviors will be positively associated with bullying behaviors and victimization experiences. (2) Bullying behaviors will be positively associated with cyberbullying (as a victim and perpetrator). (3) Victims of bullying will be positively associated with cyberbullying as well. (4) Finally, bullying is correlated with victimization, and cyberbullying with cyber victimization.

Methodology

Participants

Our study involved a total of 791 adolescents from the city of Santiago, Chile, from six urban schools. The average age was 13.57 years old, and 46.06% were female. Data were collected between May and August 2018 using self-reported surveys conducted by trained psychologists. Voluntary students responded to the survey in their classrooms. The study was approved by the Universidad del Desarrollo ethics committee.

Measures

Cyberbullying victim

This variable was measured using the Ybarra, Espelage, and Mitchell (2007) scale. This is a self-reported scale that quantifies virtual or on-line aggressions during the school year through a Likert scale (1=*I am not sure*; 5=*Often*). Some examples are: “Did someone make an offensive or negative comment about me online?”, “Did someone send me text messages saying offensive or negative things?”. A higher score indicates a higher self-report of being a victim of cyberbullying. The level of internal consistency of the scale was acceptable ($\alpha = .76$; $\omega = .78$).

Cyberbullying perpetrator

To measure the role of the perpetrator of cyberbullying, we applied the same scale of Ybarra *et al.* (2007) and the Likert scale of 4 items, but now from the perspective of the aggressor. Some examples of items were: “Have you spread rumors online, regardless of whether they were true or not?” and “Have you made threatening or aggressive comments online?” A higher score indicated a higher frequency of aggression. Internal consistency of the scale was also acceptable ($\alpha = .78$; $\omega = .80$).

Bullying victim

Bullying was measured using the self-reported Illinois Bullying Scale (Espelage & Holt, 2001). This scale was based on four items. Students were asked if they had been victims of aggression, and the Likert scale went from 1 = Never to 4 = Almost always. Some questions were: “In the last 30 days: I have been hit or pushed by other students” and “...other students have laughed at me”. Higher scores indicate more propensity to become a victim of bullying. Internal consistency was good ($\alpha = .81$; $\omega = .84$). The Illinois Bullying Scale has been used with the Spanish-speaking population and was adapted to the Chilean population in Palacios and Berger’s (2006) study.

Bullying Perpetrator

The Illinois Bully Scale (Espelage & Holt, 2001) was used based on nine self-reported items. The items on the scale measure the frequency of bullying against another classmate during the last month, based on a Likert scale (1 = Never; 4 = Almost always). Some examples were: “In the past 30 days: I have bullied other students”; “I have been hurtful to others when being angry”; “I have excluded others.” A higher score indicates a higher degree of bullying others. Internal consistency of the scale was good ($\alpha = .82$; $\omega = .83$).

Antisocial behavior

This scale was based on the National Survey of Violence in the School Environment in Chile (Encuesta Nacional de Violencia en el Ámbito Escolar, in Spanish) (Ministerio del Interior y Seguridad Pública, 2014), which measures different types of self-reported violent behavior in the school context; one of them is the antisocial behavior, that measures self-reported antisocial behaviors in the school context during the year, with a 7 item Likert scale (1 = Never; 5 = Everyday). Some items were “During this year 2018, how often have you been involved in the following situations within your educational institution?”; “... Damaged or destroyed furniture or property on purpose”; “... Sold or bought drugs (marijuana, cocaine, pasta base, others)”; “... Carried firearms”. A higher score indicates a greater self-report of antisocial behavior in the school context. Internal consistency of the scale was good ($\alpha = .79$; $\omega = .81$). This instrument –in its fourth version– has been applied at the national level and has been reviewed by an Inter-institutional Panel of Experts to improve it systematically (Ministerio del Interior y Seguridad Pública, 2014).

Demographic Variables

We used gender and age as control variables. Age was used as a continuous variable based on self-reports. Gender was used as a dummy variable.

Procedure

Data were analyzed using the Structural Equations Modeling (Kline, 2011) and examined the association of different latent variables of the study: Antisocial behavior with bully and victim (objective 1), a bully with cyberbully and cyber victim (objective 2), finally, a victim with cyber victim and cyberbully (objective 3). Furthermore, the bully was correlated with the victim and the cyberbully with the cyber victim. The Mplus 6.0 statistical program was used to test the conceptual model. Missing data were managed using the maximum likelihood estimator (MLE) (Byrne, 2012).

Results

Table 1 shows the differences between girls and boys in the study variables based on the Mann-Whitney U test. We found differences by sex only in the measures of Bullying Perpetrators and in Antisocial Behavior. Given that Cyber Victim, Cyber Perpetrator, and Bullying Victim did not present differences by sex, we performed the analyses of the study, including girls and boys as a whole. Table 2 summarizes the descriptive results of the assessed variables. All latent variables used in the study correlate significantly and positively. The structural final model, which seeks to examine the association between antisocial behaviors, traditional bullying, and the dynamics of cyberbullying, shows a good fit of the data, $\chi^2 1024.40$ ($gl = 391$, $n = 791$, $p < .001$), CFI = .92, TLI = .91, RMSEA = .05, given that, for the RMSEA indicator, values lower than .06 indicate a good fit of the model; whereas for CFI and TLI, values greater than .90 are necessary to ensure that poorly specified models are not accepted (Hooper, Coughlan & Mullen, 2008; Hu & Bentler, 1999; Kline, 2011). Figure 1 and Table 3 contain these results. Regarding the first hypothesis, according to the results, antisocial behavior is associated

with bullying behavior as a perpetrator ($\beta = .39$, $p < .001$), but not with the role of victim ($\beta = .07$, ns.). About the second hypothesis, being a bully is associated with increased cyberbullying as a self-reported aggressor ($\beta = .40$, $p < .001$) and with increased self-reported cyber victimization

($\beta = .15$, $p < .01$). Third, being a victim of bullying is associated with increased self-reported cyber victimization ($\beta = .23$, $p < .001$), but not with cyberbullying as an aggressor ($\beta = .01$, ns.). Lastly, bully and victim are correlated, as well as cyberbullying and cyber victim.

Table 1. Differences according to sex in the study variables

	Girls (n=357)	Boys (n=414)	U	p
	Mdn (Range)	Mdn (Range)		
CB Victim	2.00 (4.00)	2.00 (3.75)	73288.0	.95
CB Perpetrator	2.00 (4.00)	2.00 (3.50)	70558.5	.44
B Perpetrator	1.22 (2.22)	1.33 (3.00)	64528.0	.00
B Victim	1.50 (3.00)	1.50 (3.00)	70708.0	.29
Antisocial Behavior	1.00 (1.71)	1.00 (4.00)	66560.5	.01

Note. CB: Cyberbullying; B: Bullying.

Source: authors

Table 2. Descriptive Statistics

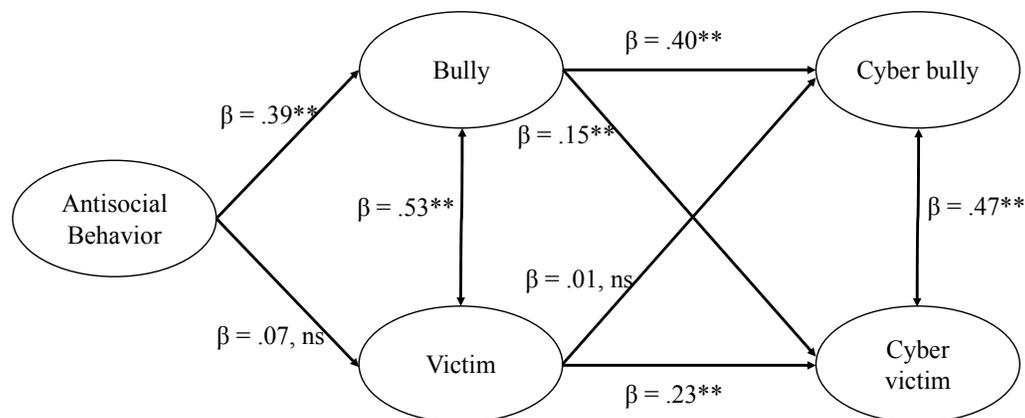
Variable	N	Mean	Standard Deviation	Minimum	Maximum
CB Victim	785	1.96	.63	1	5
CB Perpetrator	779	2.09	.44	1	5
B Perpetrator	787	1.45	.46	1	4
B Victim	787	1.65	.69	1	4
Antisocial Behavior	779	1.11	.30	1	5
Correlations	CBV	CBP	BP	BV	AB
CB Victim (CBV)	-				
CB Perpetrator (CBP)	.40**	-			
B Perpetrator (BP)	.20**	.32**	-		
B Victim (BV)	.26**	.18**	.45**	-	
Antisocial Behavior (AB)	.19**	.28**	.30**	.08*	-

Note. CB: Cyberbullying; B: Bullying.

* $p < .05$, ** $p < .01$

Source: authors

Figure 1. Structural Model



Note. Controlling for gender and age. *p < .01; **p < .001.

Source: authors

Table 3. Standardized and Non-standardized Structural Model Coefficients

	β	B	Standard Deviation	95% CI		R ²
CB Perpetrator						.16
Perpetrator	.40***	.33***	.05	.23	.42	
Victim	.01	.00	.05	-.06	.06	
CB Victim						.11
Victim	.23***	.19***	.05	.10	.27	
Perpetrator	.15**	.17**	.05	.05	.29	
Perpetrator						.15
Antisocial	.39***	1.16***	.04	.86	1.47	
Victim						.01
Antisocial	.07	.29	.04	-.06	.63	

Note. CB: Cyberbullying **p < .01; ***p < .001

Source: authors

Discussion

Our study provides evidence to understand the dynamic of antisocial behaviors and traditional bullying and cyberbullying for Chilean adolescents. We first hypothesized that the presence of antisocial behaviors in students predicts bullying and cyberbullying behaviors in aggressors. Our data suggest that antisocial behavior can predict bullying as a perpetrator but not as a victim.

In Chile, previous studies have mainly focused on prevalence (e. g. Varela, Pérez, Schwaderer,

Astudillo & Lecannelier, 2014; Varela *et al.*, 2018). However, there is an urgent need for models based on developmental variables, including other potential predictors, to provide a better understanding of this behavior. Some authors have pointed that those antisocial behaviors occur preferentially during adolescence (Moffitt, 1993), characterized by an unstable pattern (Cappadocia *et al.*, 2013) and that young people with high antisocial behavior scores are more involved in bullying and cyberbullying in all its roles (Garaigordobil, 2017). In our case, the results suggest differential effects for victims

versus bullies. Specifically, the report of antisocial behavior is associated with bullies but not with bullying victims, which confirms the idea that those who engage in bullying do not necessarily exhibit antisocial personality traits (Rigby & Slee, 1991). In longitudinal studies, Pepler, Jiang, Craig, and Connolly (2008) have shown that only a 2% of bullies and cyberbullies maintain these behaviors over time. In contrast, most students eventually abandon these behaviors, probably after they realize the harm inflicted on others. Some authors have also speculated on the existence of a subset of aggressors, characterized by their insensibility and lack of empathy or emotional skills, along with traits of grandeur and impulsivity that may be related to a persistent history or a pattern of aggression against their peers, manifested as traditional bullying or bullying through technological devices (Fanti, Demetriou, & Hawa, 2012; Fanti & Kimonis, 2012; López-Larragaña & Orue, 2019).

Along these lines, considering the sociocognitive factors of learning, it could be explained how constant exposure to a stimulus contributes to the learning of cognitive structures (i.e. attitudes and beliefs) which predict certain behaviors (Barlett & Gentile, 2012; Barlett & Kowalewski, 2019). In the specific case of cyberbullying, the Barlett-Gentile model suggests that cyberbullies develop perceptions of anonymity and the belief that physical presence is irrelevant in virtual space, thus reinforcing their positive attitudes towards virtual aggression, which leads to subsequent perpetration (Barlett & Kowalewski, 2019; Barlett *et al.*, 2020). Considering these cognitive variables could contribute to the characterization of the antisocial profile of the aggressors involved in cyberbullying.

Secondly, we hypothesize that the experience of being a victim of bullying or cyberbullying is related to each other in such a way that being a victim of one of these forms of school aggression

predicts the presence of the other. We found that being a bully is a predictor for cyberbullying as a victim or as a perpetrator. Lastly, being a victim of bullying predicts being a victim of cyberbullying, but not the role of the cyberbully.

Hence, our findings confirm the association between traditional bullying and cyberbullying. Indeed, previous studies (Guo, 2016; Kowalski *et al.*, 2012b) have postulated an association between these two behaviors, despite the distinctive characteristics of cyberbullying. As in the cross-cultural study by Zaborskis, Ilionsky, Tesler, and Heinz (2020), in which they demonstrated high correlations between bullying and cyberbullying in a sample of students from Israel, Luxembourg, and Lithuania. Specifically, within South America, Resett (2019) assessed the co-occurrence of school bullying and cyberbullying for two years in Argentine schools and demonstrated that previous bullying scores, as victims or bullies, were predictors of cyberbullying.

Even though the prevalence of cyberbullying-related aggressions is rather low (Olweus, 2012), there is a need for studies to understand this behavior. In this context, it is also important to analyze the role of the media and the attention drawn to this kind of aggression on virtual platforms, which might be overrated. Our study contributes to this area by revealing potential attributes in bullies and cyberbullies, which could help understand these phenomena. Indeed, the discovery of an association with antisocial behavior hints at a more complex profile, which plays an active role in this type of “cyber aggression.”

Conversely, being a victim of bullying is also related to being a victim of cyberbullying, but not a cyberbully. These results may account for the distinctive dynamics of victims of bullying and cyberbullying. Indeed, studies have previously noted that some students may suffer poly-victimization by being bullied at schools and online

(Mitchell, Finkelhor, Wolak, Ybarra, & Turner, 2011). Furthermore, given the impact of these two types of aggression on the psychological wellbeing of victims, it might have potentially severe consequences such as suicidal ideation (Hinduja & Patchin, 2010).

Implications for practice

Hence, the early detection and management of antisocial behaviors (Sticca *et al.*, 2012) and the development of social/interpersonal skills play a key role in the prevention of these two types of bullying (McCloughlin, 2009). In this regard, it is interesting to speculate on the design of prevention programs that do not discriminate between these two types of bullying. Previous studies demonstrate the effectiveness of cyberbullying prevention programs (Gaffney, Farrington, Espelage, & Ttofi, 2019); therefore, they could be enhanced by incorporating broader programs that include other types of bullying (Pearce, Cross, Monks, Waters, & Falconer, 2011).

Schools should consider when implementing new interventions and practices that the forms of communication and interaction between children and adolescents have mutated due to the expansion of digital technologies (Yang, Sharkey, Reed & Dowdy, 2020). Therefore, schools should aim to comprehensive prevention programs that incorporate the variety of dimensions around these behaviors, which consider that the effects of cyberbullying and bullying expand throughout time, thus requiring longer-term interventions over short-term approaches (Rose, Simpson & Moss, 2015).

Also, the design of new interventions should consider the negative effects of experiences of bullying and cyberbullying during the school stage (Hemphill, Kotovski & Heerde, 2015), such as the appearance of mental health problems like higher levels of stress, depressive

symptoms, and psychological distress (Iranzo, Buelga, Cava & Ortega-Barón., 2019).

Implications for future research

Further studies should consider replicating our analyses using longitudinal data. Other factors to include in future studies are additional age groups such as college students. Finally, future research should consider the students' mental health status and beliefs or attitudes towards virtual aggression.

Limitations

Despite the results obtained, our study has some limitations that should be considered. First, our findings are limited to adolescents. As explained above, most aggressive behaviors occur at this particular age (Selkie, Fales, & Moreno, 2016). Therefore, future studies should incorporate additional age groups such as college students. In fact, a recent study in Chile reports that 45.9% of university students have witnessed, participated, or taken part in cyberbullying (Condeza, Gallardo, & Reyes, 2019). Second, this was a cross-sectional study. Hence, when examining the association between variables, we are unable to establish causality. Third, given the evident negative impact of cyberbullying upon adolescents, it is important to assess school mental health; however, scales to do it were not available. Fourthly, only self-report scales were addressed in the present study; however, it has been suggested that further information regarding bullying and cyberbullying can be obtained by having input from different actors. For example, it has been noted that teachers, staff of educational institutions, and parents can also be reliable sources of information about these types of behaviors in the school context. Despite these limitations, our study confirms the association between antisocial behavior, traditional bullying, and cyberbullying, particularly for perpetrators, among Chilean adolescents.

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