School Factors Associated with Perpetrators and Victims of Direct and Indirect Bullying among Adolescents*

Factores escolares asociados con agresores y víctimas de acoso escolar directo e indirecto entre adolescentes

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ABSTRACT

Adolescents' social relationships evolve rapidly, and that evolution is not exempt from difficulties and challenges. Therefore it is essential to know which factors influence social relationships in both victims and perpetrators of bullying in order to pinpoint those factors that put adolescents at risk, and to design strategies of prevention and intervention against school violence. This study evaluated 5028 secondary education students aged 12-16 years old. A correlation was made among the variables of age, gender, school coexistence, and direct/indirect bullying of both the bully and the victim. In turn, a multiple regression analysis was performed to predict direct and/or indirect bullying on the part of the perpetrator and/or the victim. The results revealed the existence of significant relationships among those variables. We discuss these relationships and provide an intervention proposal to prevent aggressive behavior at schools. In our findings, the general quality of coexistence is optimal, since social integration is high. Another factor that contributes to this climate is the good perception that these students have in general of the management of bullying by their teachers. Several future research lines can be drawn.

Keywords
school co-existence; direct bullying; indirect bullying; perpetrators; victims; adolescence.

RESUMEN

Las relaciones sociales de los adolescentes evolucionan rápidamente, y esa evolución no está exenta de dificultades y desafíos. Por tanto, es fundamental conocer qué factores influyen en las relaciones sociales, tanto en víctimas como en agresores de acoso escolar, con el fin de identificar aquellos factores que ponen en riesgo a los adolescentes y

diseñar estrategias de prevención e intervención frente a la violencia escolar. Este estudio evaluó a 5028 estudiantes de educación secundaria de 12 a 16 años. Se realizó una correlación entre las variables edad, género, convivencia escolar y acoso directo/indirecto tanto del acosador como de la víctima. A su vez, se realizó un análisis de regresión múltiple para predecir el acoso directo y/o indirecto por parte del agresor y/o la víctima. Los resultados revelaron la existencia de relaciones significativas entre esas variables. Discutimos estas relaciones y brindamos una propuesta de intervención para prevenir comportamientos agresivos en las escuelas. En nuestros hallazgos, la calidad general de la convivencia es óptima, ya que la integración social es alta. Otro factor que contribuye a este clima es la buena percepción que estos estudiantes tienen en general del manejo del *bullying* por parte de sus profesores. Se pueden trazar varias líneas de investigación futuras.

Palabras clave
convivencia escolar; acoso escolar directo; acoso escolar indirecto; agresores; víctimas; adolescencia.

Undoubtedly, school co-existence is a growing challenge for the current education system. According to Unesco (2015), nowadays learning how to live in our society is even more complex and, as such, has become one of the main objectives worldwide. In this context, school plays an important role as it is fundamental for not only adolescents' development, but also for both their social and personal areas (Grau et al., 2017). We should bear in mind that most of the social relationships born in educative contexts are positive as they provide youngsters with a means to satisfy their needs and to enrich their experiences (Inglés, 2009; Parada, 2010).

According to some research conducted in Spain, e.g., the works by Suárez et al. (2014), the scientific community recognizes that managing school co-existence is complex, multidimensional and global. Therefore, many professionals in the education field seek support from public authorities to be trained in strategies to cope better with a new complex reality.

Bullying behavior is a violent and damaging behavior present among schools and commonly conducted by adolescents (Kljakovic & Hunt, 2016; Polo del Río et al., 2017). While a global definition of bullying is accepted, also some researchers recognize two subtypes of bulling: direct and indirect. Regarding a global definition of bullying, this is commonly characterized by intentional attacks that can come in several forms (physical or verbal assault, stealing, destruction, isolation, etc.) and be practiced on one victim by one aggressor or more. These attacks are not unique, but continuous with time, facilitated by the victim's inferiority (physical or lower social or psychological support) compared to the aggressors (Olweus, 1993). In relation to the two subtypes of bullying, direct bullying is defined as involving face-to-face physical and verbal aggression, while indirect bullying is more covert in nature and may occur via a third person (e.g. spreading malicious rumours, purposefully isolating others from social situations) (Smith et al., 2012). Although popular consideration of bullying comes more to some explicit manifestation of violence, in accordance to direct bullying, however, rates of indirect forms of victimization, that are commonly more invisible, are, in some cases, more than twice the rates of physical violence occurring within schools (Dinkes et al., 2007; Li & Zhu, 2020).

A number of studies have focused on the predictor factors of bullying (Atik & Güneri, 2013; Zych et al., 2019). However, there is little research on the specific factors related to both subtypes of bullying, direct and indirect, while correlates of both forms of bullying seem to differ. On the one hand, some of the predictor factors as well as consequences on their victims are different for both types of bullying (Baldry, 2004; Brighi et al., 2012; Volk et al., 2019). Among some of these factors, sociodemographic variables such as gender and age have shown to be relevant. Regarding gender, most studies indicate that males are more likely to be both perpetrators and victims of bullying (Antoniadou et al., 2016; Montañés et al., 2009), however, indirect bullying seem to be more common among girls (Cerezo-Ramírez, 2014), probably because it requires social and verbal skills, that more early develop among girls in comparison to boys (Carbone-Lopez et al., 2010). Age is likely to be linked to greater bullying, therefore some bullying behaviors may appear from 12 years old, and they may become greater until 18 years old, with a particular range that lies between

13 and 14 years old (Garaigordobil, 2015; Peris et al., 2018). On the other hand, some school context related variables have been examined, such as the quality of coexistence (Berkowitz et al., 2017) and therefore the peer's network of support, often studied through the number of good friends, showing, in a sample of Primary students, that a better coexistence among schools and a greater number of good friends have a direct connection with less bullying (Moyano et al., 2019). Therefore, the development and maintenance of bonds and friendships are a protector factor against bullying, as previously evidenced (Kendrick et al., 2012; Mucherah et al., 2018; Zych et al., 2018).

Student's perceptions of their teacher's behavior to cope bullying have shown to play an important role in preventing bullying (Nocentini et al., 2019; Rigby, 2020). Even more, as recently meta-analyzed by Gaffney et al. (2019) most of the preventive programs and effective interventions to reduce bullying often requires from training teachers to ensure zero tolerance to bullying as well as their involvement on bullying supervision and management in several countries (Kärnä et al., 2011; Roland et al., 2010; Toner, 2010; van der Ploeg et al., 2016). Therefore, how teachers handle bullying situations (Benítez Muñoz et al., 2007), and even more, how students perceive teacher's involvement and actions for controlling bullying may be of relevance for understanding adolescent's perpetration of violent behaviors at school. However, this variable has mostly emerged as relevant from qualitative research (Patton et al., 2017; Sjursø et al., 2019), but little research using quantitative design methods. Therefore, it remains unclear whether how student's perceive teachers handle bullying may be a predictor factor on bullying or what the specific impact of this variable on both the perpetration or victimization of bullying would be.

Adolescence is shown as the period in which prevalence of bullying gets the highest rates, being the specific range of 14-15 years old the most strongly affected (Herrera-López et al., 2017). Therefore, prevalence's studies in Spanish samples show prevalence rates of 10.7 % among students from Barcelona (García-Continente et al., 2010). A study examining data from 32 studies with Spanish samples indicates a bullying prevalence of 11.4 % in a database with 120 000 minors (García-García et al., 2017). Regarding victimization suffered at ESO, Carrillo (2018) worked with a sample of 500 students from Seville (south Spain). From a psychosocial perspective, this author reveals that 20.5% have suffered bullying, with distribution ranges from 7.7 % for ESO year 1, which lowers yearly to 2.6 % for year 4 and per course.

In view of the previously commented gaps in the literature, we conducted the present study. The goal was 1) to examine the prevalence of direct and indirect forms of bullying, both perpetrated and victimized; 2) to explore the relationship between sociodemographic variables – gender and age – and several school-related variables, in particular, the number of good friends, the quality of coexistence, and the perception of their teachers' handling of direct and indirect bullying, in the case of perpetrators as well as that of victims. We therefore tested predictive models independently for each subtype of bullying, and for being either the aggressor or the victim

Method

Participants

We collected data from adolescents enrolled in secondary education (ESO) at 21 schools in the Autonomous Community of Aragon (Spain). After eliminating the cases where individuals did not complete 75 % or more of the survey, we examined the data of 5 028 adolescent students (50.4 % boys and 49.6 % girls) with ages ranging from 11 to 19 years old ($M = 14.3$, $SD = 1.37$). The sample was equally distributed across academic years: approximately 25 % of the students were enrolled in each of the four years of ESO.

Measures

- A socio-demographic background questionnaire with items regarding gender (1= boys, 2= girls), age, academic year, and number of good friends at school (from 0 to 4-5 friends).

- Quality of co-existence was measured by three components: social integration, perceptions of positive relationships among students, and perceptions of negative relationships among students. These components were made up of nine items previously used in national studies supported by the Spanish Ministry of Education on the subject of school co-existence and bullying (Díaz-Aguado et al., 2010). Three of those nine items were about social integration: "I easily make friends". This scale also measured the perception of positive relationships or relationships based on cooperation (3 items): "Students help each other, but are not friends", and perception of negative relationships or conflicts (3 items): "Fights occur among students". The scores of these three items should be inverted to obtain an overall score by summing all the item scores. The answer scale ranged from 1 to 4, with 1 meaning Completely disagree and 4 denoting Completely agree. For the present study, Cronbach's alpha values were 0.81, 0.68 and 0.73, respectively, for social integration, perception of positive relationships, and perception of negative relationships (0.73, 0.63 and 0.74 in Díaz-Aguado et al., 2010).

- Bullying. In order to measure bullying among adolescents, we administered the self-reported measure previously used by Díaz-Aguado et al. (2013). The instructions for this measure indicate: "Think whether you have suffered any of the following situations and mark the frequency with which you have suffered one of them in the last 2 months". The scale comprised 11 items answered on a 4-point Likert scale ranging from 1, never, to 4, many times. It provided scores for several bullying types:

Direct Bullying: consists of six items that describe situations of aggression, such as "They hit me". Cronbach's alpha were 0.87 in Díaz-Aguado et al. (2013).

Indirect Bullying: victims of situations of social exclusion or humiliation, measured by five items. For example: "My schoolmates ignore me". Cronbach's alpha were 0.86 in Díaz-Aguado et al. (2013).

- Perception of teachers' handling of bullying. Due to the absence of a self-reported measure for this variable, we used four items based on previous studies conducted within the framework of nationwide Spanish Ministry of Education projects designed to explore bullying among students. Regarding the question "What do the teachers from your school do to cope with violence or exclusion situations?", the four items were: 1) They look to another side: 2) They do not know how to stop them; 3) They work effectively to prevent these problems; and 4) We can rely on our teachers for these situations. Each item is answered on a scale ranging from No teacher to Most of the teachers. For the present study, Cronbach's alpha value was 0.61.

Procedure

Twenty-one schools in the Autonomous Community of Aragon were selected by the Regional Government in terms of quota convenience sampling. A letter was sent to schools inviting them to collaborate, and containing information on the study's main goals, while likewise establishing the need for parental authorization and informed consent. A research phase timeline was attached. Data were collected from March to April 2018 with the collaboration of the principal and the teachers in each school. This phase was coordinated and supervised by research team members, who were working in each city/town and kept in touch with each school in person and by telephone. Once consent from each school was confirmed, the schools that were to take part in the study received their corresponding user code and passwords to access the online survey. The students from each school completed the survey under similar conditions, during school hours, with guaranteed privacy, in a laboratory using computers. Some teachers accompanied students to provide them

with support. Anonymity and confidentiality were guaranteed. Students completed the survey in approximately 25-40 minutes. This study was carried out following the Ethical Guidelines for Educational Research established by the Council of the British Educational Research Association (2011).

Data Analyses

Normality tests were performed on the variables (Kolmogorov-Smirnov and Shapiro-Wilk), however, despite the fact that some of them did not present a normal distribution with sample sizes above 40, the following analyses could be conducted despite that the data distribution was asymmetric and there were no outliers (Pardo et al., 2014). First, we calculated the descriptive statistics for all the examined measures and we conducted zero-order correlations among the study variables. Linear multiple regressions were performed to obtain a further understanding of the relationships between the studied variables. In particular, we conducted four independent linear multiple regression analyses by regressing direct and indirect bullying – both in the role of aggressor and of victim – onto the correlated independent variables. Analyses were performed with SPSS software version 20.

Results

Table 1 provides the descriptive statistics of the variables under study. As can be seen, the number of good friends indicated by students was high, as 86.7 % indicated having four or more friends at school. Scores for quality of coexistence lay around the theoretical midpoint of the scale or over it, thereby generally indicating an optimum degree of coexistence, especially in terms of social integration. Regarding the perception of teachers' handling of bullying, the mean value lay around the theoretical midpoint or over it, thereby indicating a global perception of efficacy on the part of teachers to reduce bullying. Regarding bullying behavior (as aggressor and

as victim), frequencies were below the midpoint of the scale, therefore indicating that low-to-moderate levels of bullying were sensed.

Table 1

Descriptive statistics of the examined variables (N= 5028)

Variables	N (%)
Sociodemographic characteristics	
Gender	
Boys	2.535 (50,4)
Girls	2.493 (49.6)
Age	14.13(1.37)
Academic year	
1° ESO	1.288(25.6)
2° ESO	1.343(26.7)
3° ESO	1.288(25.6)
4° ESO	1.109(22.1)
School-related context	
Number of good friends at school	
None	48 (1)
1	66 (1.3)
2-3	544 (10.8)
4-5	961 (19.1)
6 or more	3.409 (67.8)
Quality of coexistence	
Social integration (4 to 12)	9.9 (1.8)
Positive relationships (4 to 12)	8.6 (1.8)
Negative relationships (4 to 12)	8.5 (2.3)
Perception of teachers' handling of bullying (4 to 16)	11.56 (2.48)
Frequency of Bullying (aggressor)	
Direct bullying (4 to 12)	7.36(2.37)
Indirect bullying (4 to 12)	6.38(1.66)

Then we performed zero-order correlation among the examined variables. Regarding sociodemographic variables as displayed in Table 2, we found that gender was positively correlated with all forms of bullying (direct and indirect), both as aggressor and as victim, except in the case of the perpetration of direct bullying, which indicates that being a girl was related with a higher frequency of indirect bullying (as perpetrator) and with both direct and indirect bullying (as victim). However, being a boy was related with a higher frequency of perpetration of direct forms of bullying. Age was scarcely correlated with indirect bullying. Significant negative correlations could be observed between the number of good friends and the quality of co-existence (measured by social integration, positive relationships and negative relationships) and of direct and indirect bullying (both as

aggressor and as victim). In addition, the perception of teachers' handling of bullying was also negatively correlated with direct and indirect bullying (both as aggressor and as victim).

Table 2
Correlations among variables under study. Pearson's correlations among variables under study

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Gender	1	0.01	0.08***	0.06***	-0.02	0.04**	-0.07***	-0.04**	0.10***	0.04**	0.12***
2. Age		1	-0.14***	-0.13***	-0.09***	0.07***	-0.16***	0.02	0.03*	-0.01	0.03*
3. Number of good friends			1	0.42***	0.18***	0.04***	0.07***	-0.08***	-0.04**	-0.21***	-0.07***
4. Social integration				1	0.42***	0.06***	0.13***	-0.12***	-0.04**	-0.33***	-0.09***
5. Positive relationships					1	0.17***	0.20***	-0.16***	-0.05**	-0.21***	-0.04**
6. Negative relationships						1	0.17***	-0.21***	-0.17***	-0.21***	-0.12***
7. Perception of teachers' handling of bullying							1	-0.15***	-0.13***	-0.14***	-0.10***
8. Direct bullying (aggressor)								1	0.61***	0.28***	0.27***
9. Indirect bullying (aggressor)									1	0.37***	0.54***
10. Direct bullying (victim)										1	0.63***
11. Indirect bullying (victim)											1

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

We conducted four independent linear regression models to test the predictive factors of bullying. We first tested a model for the prediction of the perpetration of direct bullying. As can be seen in Table 3, the linear regression ($F (5, 4183) = 72.19$; $p < 0.001$) revealed that the predictive variables explained 7.8 % of the variance of direct bullying (as aggressor). In the model, negative relationships were found to be the strongest predictor ($\beta = 0.18$, $p < 0.001$). The other predictors were positive relationships ($\beta = -0.08$, $p < 0.001$), social integration ($\beta = -0.05$, $p < 0.001$), gender ($\beta = -0.04$, $p < 0.001$), and perception of teachers' handling of bullying ($\beta = -0.10$, $p < 0.001$). Therefore, greater negative relationships, lower positive relationships, lower social integration, and a perception that teachers do not adequately cope with bullying better predicted the perpetration of direct forms of bullying. In addition, being male was positively related with greater direct bullying. Regarding the perpetration of indirect bullying, the regression model explained 5.3% of variance ($F (5, 4183) = 59.95$, $p < 0.001$). In the model, negative relationships were the strongest predictor ($\beta = 0.16$, $p < 0.001$),

followed by gender ($\beta = 0.10$, $p < 0.001$), age ($\beta = -0.09$, $p < 0.001$), and perception of teachers' handling of bullying ($\beta = -0.09$, $p < 0.001$). In other words, more negative relationships (as opposed to positive relationships and social integration) and the perception that teachers did not efficiently cope with bullying better predicted the perpetration of indirect bullying. In addition, being a girl was a predictor for a greater amount of indirect bullying (Table 4).

Table 3
Regression coefficients of predictors of direct bullying (aggressor)

Variables	B	SE	β	t
Negative relationships	0.27	0.02	0.18	11.92***
Positive relationships	-0.16	0.03	-0.08	-5.27***
Social integration	-0.11	0.03	-0.05	-3.60***
Gender	0.29	0.10	0.04	-2.85**
Perception of teachers' handling of bullying	-0.14	0.02	-0.10	-6.59***

Note.SE = Standard Error. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table 4
Regression coefficients of predictors of indirect bullying (bully)

Variables	B	SE	β	t
Negative relationships	0.16	0.01	0.16	-10.75***
Gender	-0.47	0.06	-0.10	6.89***
Age	-0.09	0.01	-0.09	-6.46***
Perception of teachers' handling of bullying	-0.08	0.01	-0.09	-6.05***

Note.SE = Standard Error. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

When analyzing the predictive factors of being a victim of either direct or indirect bullying, described in Tables 5 and 6 respectively, we found, regarding direct bullying, that the regression model explained 16 % of variance ($F (5, 4183) = 133.29$, $p < 0.001$). Social integration was the strongest predictor that negatively predicted whether the student would

suffer a greater amount of direct bullying (β = -0.29, p < 0.001), followed by negative relationships (β = 0.17, p < 0.001). The predictors that were negatively related to direct bullying were positive relationships (β = -0.05, . < 0.001), gender (β = -0.06, p < 0.001), age (β = -0.05, p < 0.001), perception of teachers' behavior (β = -0.07, p < 0.001), and having less friends (β = -0.08, p < 0.001). In sum, being less integrated, having less friends, having worse relationships, together with being male, younger, and perceiving one's teachers as less likely to cope with bullying predicted that the student would suffer direct bullying. Finally, the model of being a victim of indirect bullying explained 4.3 % of the variance (F (5, 4183) = 47.86, p < 0.001). In the model, gender was the strongest predictor (β = -0.12, p < 0.001), closely followed by negative relationships (β = 0.11, p < 0.001), social integration (β = -0.07, p < 0.001), perception of teachers' handling of bullying (β = -0.06, p < 0.001), and having less friends (β = -0.05, p < 0.001). That is, being a girl was strongly related with being a victim of indirect bullying, in addition to more negative relationships, being less socially integrated, having less friends, and perceiving teachers as less able to cope with bullying.

Table 5
Regression coefficients of predictors of direct bullying (victim)

Variables	B	SE	β	t
Social integration	-0.33	0.02	-0.29	-18.98***
Negative relationships	0.17	0.01	0.17	-12.72***
Positive relationships	-0.06	0.02	-0.05	-3.27***
Gender	-0.28	0.06	-0.06	4.27***
Age	-0.10	0.02	-0.05	-3.92***
Perception of teachers' handling of bullying	-0.06	0.01	-0.07	-4.89***
Number of good friends	-0.25	0.04	-0.08	-5.46***

Note.SE = Standard Error. *** p < 0.001; ** p < 0.01; * p < 0.05

Table 6
Regression coefficients of predictors of indirect bullying (victim)

Variables	B	SE	β	t
Negative relationships	0.08	0.01	0.11	-7.47***
Social integration	-0.07	0.01	-0.07	-5.17***
Gender	-0.41	0.05	-0.12	8.23***
Perception of teachers' handling of bullying	-0.04	0.01	-0.06	-4.29***
Number of good friends	-0.10	0.03	-0.05	-3.07**

Note.SE = Standard Error. *** p < 0.001; ** p < 0.01; * p < 0.05

Discussion

The present study's goal was, on the one hand, to analyze the existence of direct and indirect bullying as perpetrated and victimized, and, on the other hand, to study the relation between those variables and certain sociodemographic variables such as age and gender, along with further factors associated with school climate, the number of good friends, the quality of coexistence, and the perception of the teachers' handling of bullying.

This study has confirmed the importance of good coexistence in the school environment, since it is related both with direct and with indirect bullying. Thus, positive relationships, negative relationships, and social integration seem to be three factors that correlate with direct and indirect bullying. One concrete, particularly relevant finding is the high correlation between positive relationships and social integration: this is fundamental in generating a good climate of coexistence. The results generally reflect a relatively high quality of coexistence in the schools, since the obtained scores are one point above the median. As pointed out by Ramírez et al. (2019), good coexistence within the school is one of the most formidable challenges facing educational institutions in the future. Schools should be places of learning where adolescents can acquire good habits, and, particularly, positive attitudes toward values such as tolerance, participation, dialogue, and the

respect and acceptance of one's fellow human beings: this is a fundamental aspect in the education of adolescents to ensure that they may learn to live in harmony with one another. We must remember that the development of an adolescent's personality depends on the quality of coexistence they may have with the people around them. Harmonic coexistence is undoubtedly the most important thing they need to learn as part of their personal development (Torroella, 2007).

Another important aspect addressed in this study was the students' perception of the manner in which teachers coped with bullying. According to the results obtained, the students globally perceive that the teachers display a medium-to-high degree of efficacy in helping to reduce bullying. These results partially coincide with a study carried out by Caballero Grande (2010), in which the teachers, although defending the importance of coexistence, acknowledged that their actions were practically limited to the resolution of conflicts where direct violence was involved, although they had no specific strategy to improve the situation.

Intimidation among peers is a problematic phenomenon that affects schools worldwide. Aggressive-type behavior is still a prevalent problem (Gaffney et al., 2018) as shown by Modecki et al., (2014) in their analysis of 80 international studies. These data are congruent with our findings, as we had two student groups who reported having been directly and indirectly bullied. A recent study by Mucherah et al., (2018), shows that the school environment is strongly linked with bullying, particularly if we take into account that many aggressors co-exist with their targets in the same classroom. Students' perception of their school environment has an impact on relationships between students and teachers, and also on relationships among peers, which likewise affects bullying (Battistich et al., 2004). In this sense we find it necessary for students' perception of their school climate to be constantly evaluated in order to prevent bullying. This is coherent with previous studies, such as the one carried out by Connell et al., (2015), who studied victimization among peers and the

authoritarian school climate among students in intermediate school: they found that high scores for school climate were significantly associated with less victimization among peers.

According to our data, social integration and positive relationships are significant, which means that youngsters seek to become integrated into an environment where good relationships are prevalent. According to a study by Shin (2010), larger peer networks provide support and, therefore, act as a protecting factor against victimization, especially for those students classified as passive victims. For that author, children from the same "bully/bullied" subgroups tend to become friends. Both aggressors and victims tend to become friends within their group, but passive victims do not find that they receive support or help. Other authors such as Jia and Mikami (2015), conclude that although children with externalized behavior tend to have more friends, this increases their likelihood of displaying intimidatory behavior. Youths tend to become friends with peers who are similar to them, in contrast to those who are different, who, in turn, tend to motivate them to become involved in intimidatory behavior (Olthof & Goossens, 2008; Shin, 2010). Acceptance on the part of peers can protect someone more than just having a certain quantity of friends per se, as it is less likely that children with good intentions would tend to intimidate or be victimized (Jia & Mikami, 2015). Yet even in cases where children attend larger classrooms, victim youths are less likely to have many friends (Shin, 2010) and, consequently, it is less likely that they receive support or protection from larger peer networks. The results from these studies are in line with those of our own. For instance, we obtained significant negative correlations between the number of good friends and quality of coexistence, using social integration, positive/negative relationships as a value with direct and indirect bullying. Moreover, as pointed out above, the perception of the teachers' handling of bullying was also negatively correlated with direct as well as with indirect bullying.

Another important issue analyzed in this study was the relation between bullying and gender.

We found that gender correlated positively with the two forms of bullying (direct and indirect) on the part of the perpetrator as well as that of the victim. Girls correlate as perpetrators with indirect bullying, and as victims with both direct and indirect bullying. Boys are correlated with direct bullying. These results are in line with those obtained by Pepler et al., (2008), who, in their study, found that boys have a higher probability of being involved in intimidation than girls. A large-scale meta-analysis of 153 studies, carried out by Cook et al., (2010), found a correlation of gender (boys) with the roles of perpetrator, perpetrator/victim, and victim, which implies a greater prevalence of boys in all three roles (although the gender difference in the role of victim was not very large). Most studies found that boys have a greater probability of being involved in physical forms of victimization, whereas bullying among girls tends to be more relational or verbal (Menesini & Salmivalli, 2017): these results are in line with ours.

One important result in our study is that the direct or indirect perpetration of bullying is determined by a greater number of negative relationships, as well as by less social integration and less positive relationships, combined with the students' perception that teachers are not adequately confronting the phenomenon of bullying. As argued by Yang et al., (2020), if teachers want to obtain positive results with adolescents, such results can improve, provided that the school climate meets the students' developmental needs. On the other hand, if adolescents have a negative perception of their school environment, the probability that they intimidate others will increase. This is confirmed by Wong & Wang (2015), who found that students' perception of school climate is a good predictor of bullying. Several studies demonstrate that a good perception of one's school climate is negatively correlated with the perpetration of intimidation (Álvarez-García et al., 2015; Espelage et al., 2014; Williams & Guerra, 2007). All in all, the better the relationships within the school and the more the students are integrated, the less likelihood for bullying to occur (Låftman et al., 2017; Cava, 2011; Conde et al., 2017).

In relation with the direct and indirect forms of bullying, our results coincide with the study by Baldry (2003), who analyzed school violence in relation with factors of domestic violence, finding that boys are more involved than girls in the intimidation of their peers. Exposure to interparental physical violence and direct bullying in school are significantly associated with one another, especially in girls.

In relation with factors that predict the role of victim of direct bullying, the factor of social integration was the one which negatively predicted the situation of suffering a greater amount of bullying, while gender was the strongest predictive factor for indirect bullying, especially in girls. These results closely resemble those obtained by Marini et al. (2006), who indicated that victims and perpetrators of indirect bullying displayed greater internalization problems, as well as problems in establishing relationships with their peers.

Along those same lines, Carbone et al. (2010), carried out a study of school violence and bullying, and they suggested that males have a greater tendency to be both perpetrators and victims of bullying. Due to such circumstances, the problems suffered by women had been largely overlooked until recently. The evidence nevertheless suggests that definition and measurement problems could have been involved: for example, girls have a greater probability of experiencing indirect forms of intimidation, such as taunts.

Conclusions

In our findings, the general quality of coexistence is optimal, since social integration is high. Another factor that contributes to this climate is the good perception these students generally have of their teachers' handling of bullying.

Direct bullying is mainly related with negative relationships, although it is also affected by variables such as positive relationships, social integration, and the perception of the teachers' handling of bullying. In other words: a greater amount of direct bullying is predicted by a greater

number of negative relationships combined with a lower number of positive relationships and a poorer degree of social integration, along with the perception that teachers do not adequately face up to bullying. The fact of being of male gender is positively related with a greater amount of direct bullying.

Indirect bullying is likewise best predicted by the negative relationships factor, followed by the perception of the teachers' handling of bullying. Boys display a greater correlation with direct bullying; girls display a greater correlation with indirect bullying.

In terms of the victims, the factor most closely related with direct bullying and which best predicts this phenomenon is social integration. Having less friends or less friendships in school, as well as perceiving one's teachers as less apt to cope with bullying are all factors that predict that the student will be a victim of direct bullying. Boys are more prone to be victims (as well as perpetrators) of direct bullying.

Being a victim of indirect bullying is best predicted by gender, followed by negative relationships, social integration, the perception of the teachers' handling of bullying, and having less friends. Girls are more strongly correlated with the category of victim of indirect bullying than boys.

This study has several limitations. We should be cautious with further interpretations as we have used self-reported measures. Therefore, further research featuring the collection of qualitative information would help us obtain a better grasp of this phenomenon. Further information from proxies, such as teachers and children's parents, would also help us to better understand bullying and other associated factors. As our sample was not randomly selected from the total population of Spain, the generalization of our results cannot be guaranteed.

Several future research lines can be drawn: to extend research to other variables that may be relevant in gaining a better understanding of bullying: to explore cultural aspects, to include diverse families, to incorporate further socio-personal variables associated with the school environment, such as empathy, self-concept or self-esteem, and empowerment, among others. A longitudinal perspective would also improve our knowledge about this phenomenon's evolutionary perspective from childhood through adolescence to adulthood.

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References

Álvarez-García, D., García, T., & Núñez, J. C. (2015). Predictors of School Bullying Perpetration in Adolescence: A Systematic Review. *Aggression and Violent Behavior, 23*, 126-136. https://doi.org/10.1016/j.avb.2015.05.007

Antoniadou, N., Kokkinos, C. M., & Markos, A. (2016). Posibles correlatos comunes entre el acoso y el ciberacoso en adolescentes. *Psicología Evolutiva, 22*(1), 27-38. https://doi.org/10.1016/j.pse.2016.01.003

Atik, G. & Güneri, O. Y. (2013). Bullying and Victimization: Predictive Role of Individual, Parental, and Academic Factors. *School Psychology International, 34*(6), 658-673. https://doi.org/10.1177%2F0143034313479699.

Baldry, A. C. (2003). Bullying in Schools and Exposure to Domestic Violence. *Child Abuse & Neglect, 27*(7), 713-732. https://doi.org/10.1016/s0145-2134(03)00114-5

Battistich, V., Schaps, E., & Wilson, N. (2004). Effects of An Elementary School Intervention on Students' "Connectedness" to School and Social Adjustment during Middle School. *Journal Primary Prevention, 24*(3), 243–262. https://doi.org/10.1023/B:JOPP.0000018048.38517.cd

Benítez Muñoz, J. L., Tomás De Almeida, A. M., & Justicia Justicia, F. (2007). La liga de alumnos amigos: Desarrollo de las habilidades sociales del alumnado para prestar apoyo socioemocional. *Anales de psicología, 23*(2), 185-192. https://revistas.um.es/analesps/article/view/22461

Berkowitz, R., Moore, H., Astor, R. A., & Benbenishty, R. (2017). A Research Synthesis of the Associations between Socioeconomic Background, Inequality, School Climate, and Academic Achievement. *Review of Educational Research, 87*(2), 425–469. https://doi.org/10.3102/0034654316669821

Brighi, A., Guarini, A., Melotti, G., Galli, S., & Genta, M. L. (2012). Predictors of Victimization across Direct Bullying, Indirect Bullying and Cyberbullying. *Journal of Emotional and Behavioral Difficulties*, 1. (3-4), 375-388. https://doi.org/10.1080/13632752.2012.704684

British Educational Research Association [BERA]. (2011). *Ethical Guidelines for Educational Research*. https://www.bera.ac.uk/researchers-resources/publications/ethical-guidelines-for-educational-research-2011.

Carbone-Lopez, K., Esbensen, F. A., & Brick, B. T. (2010). Correlates and Consequences of Peer Victimization: Gender Differences in Direct and Indirect Forms of Bullying. *Youth Violence and Juvenile Justice, 8*(4), 332-350. https://doi.org/10.1177/1541204010362954

Carrillo, A. (2018). El acoso escolar como forma de violencia en la enseñanza secundaria, una visión legal del problema. *Revista sobre la infancia y la adolescencia, 14*, 1-22. https://doi.org/10.4995/reinad.2018.6780

Cava, M. J. (2011). Familia, profesorado e iguales: claves para el apoyo a las víctimas de acoso escolar. *Psychosocial Intervention, 20*(2), 183-192. https://doi.org/10.5093/in2011v20n2a6

Cerezo-Ramírez, F. (2014). Soporte social en bullying. Análisis de la soledad de la víctima. *Revista electrónica interuniversitaria de formación de profesorado,* 17(1), 123-132. https://doi.org/10.6018/reifop.17.1.198881

Conde, S., Azaustre, M. C., & Méndez, J. C. (2017). Leadership: Its Importance in the Management of School Coexistence. *Procedia-Social and Behavioral Sciences, 237*, 169-174. https://doi.org/10.1016/j.sbspro.2017.02.059

Connell, N. M., El Sayed, S., Reingle Gonzalez, J. M., & Schell-Busey, N. M. (2015). The Intersection of Perceptions and Experiences of Bullying by Race and Ethnicity among Middle School Students in the United States. *Deviant Behavior, 36*(10), 807-822. https://doi.org/10.1080/01639625.2014.977159

Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of Bullying and Victimization in Childhood and Adolescence: A Meta-Analytic Investigation. *School Psychology Quarterly, 25*, 65–83

Díaz-Aguado, M. J., Martínez Arias, R., & Babarro, J. M. (2013). El acoso entre adolescentes en España. Prevalencia, papeles adoptados por todo el grupo y características a las que atribuyen la victimización. *Revista de Educación, 362,* 348-379. https://doi.org/10.4438/1988-592X-RE-2011-362-164

Díaz-Aguado, M. J., Martínez Arias, R., & Martín, J. (2010). *Estudio estatal sobre la convivencia escolar en la educación secundaria obligatoria*. Observatorio de Convivencia Escolar. . https://sede.educacion.gob.es/publiventa/estudio-estatal-sobre-la-convivencia-escolar-en-la-educacion-secundaria-obligatoria/educacion-secundaria-socializacion/13567

Dinkes, R., Cataldi, E. F., & Lin-Kelly, W. (2017). Indicators of School Crime and Safety: 2007. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice. Washington, D. C. https://nces.ed.gov/pubs2008/2008021a.pdf.

Espelage, D. L., Polanin, J. R., & Low, S. (2014). Teacher and Staff Perceptions of School Environment as Predictors of Student Aggression, Victimization, and Willingness to Intervene in Bullying Situations. *School Psychology Quarterly, 29*(3), 287-295. https://doi.org/10.1037/spq0000072

Gaffney, H., Ttofi, M., & Farrington, D. P (2019). Evaluating the Effectiveness of School-Bullying Prevention Programs: An Updated Meta-Analytical Review. *Aggression and Violent Behavior, 45*, 111-133. https://doi.org/10.1016/j.avb.2018.07.001

Garaigordobil, M. (2015). Cyberbullying in Adolescents and Youth in the Basque Country: Changes with Age. *Anales Psicología, 31*(3), 1069–1076. https://doi.org/10.6018/analesps.31.3.179151

García-Continente, X., Pérez Giménez, A., & Nebot Adell, M. (2010). Factores relacionados con el acoso escolar (bullying) en los adolescentes de Barcelona. *Gaceta Sanitaria 24*(2), 103-108. https://doi.org/10.1016/j.gaceta.2009.09.017

García-García, J., Ortega, E., De la Fuente, L., Zaldívar, F., & Gil-Fenoy, M. J. (2017). Systematic Review of the Prevalence of School Violence in Spain. *Social and Behavioral Sciences, 237*, 125-129. https://doi.org/10.1016/j.sbspro.2017.02.052

Caballero Grande, M. J. (2010). Convivencia escolar. Un estudio sobre buenas prácticas. *Revista de paz y conflictos, 3*, 154-170. https://doi.org/10.30827/revpaz.v3i0.448

Grau, R., García-Raga, L., & López-Martín, R. (2017). The Challenge of Coexistence in Socially Vulnerable Schools. *Procedia - Social and Behavioral Sciences, 237*, 710-716. https://doi.org/10.1016/j.sbspro.2017.02.049

Herrera-López, M., Romera, E., & Ortega-Ruiz, R. (2017). Bullying y cyberbullying en Colombia; coocurrencia en adolescentes escolarizados. *Revista Latinoamericana de Psicología, 49*(3), 163-172. https://doi.org/10.1016/j.rlp.2016.08.001

Ingle#s, C. J. (2009). *Ensen#anza de habilidades interpersonales en la adolescencia.* Pehia Program, 3rd Ed. Pira#mide.

Jia, M., & Mikami, A. Y. (2015). Peer Preference and Friendship Quantity in Children with Externalizing Behavior: Distinct Influences on Bully Status And Victim Status. *Journal of Abnormal Child Psychology, 43*, 957-969. https://doi.org/10.1007/s10802-014-9956-8

Kärnä, A., Voeten, M., Little, T., Poskiparta, E., Kaljonen, A., & Salmivalli, C. (2011). A Large-Scale Evaluation of the KiVa Antibullying Program: Grades 4-6. *Child Development, 82*(1), 311-30. https://doi.org/10.1111/j.1467-8624.2010.01557.x

Kljakovic, M. & Hunt, C. (2016). A Meta-Analysis of Predictors of Bullying and Victimisation in Adolescence. *Journal of Adolescence, 49*, 134-145. https://doi.org/10.1016/j.adolescence.2016.03.002

Kendrick, K., Jutengren, G., & Stattin, H. (2012). The Protective Role of Supportive Friends Against Bullying Perpetration and Victimization. *Journal of Adolescence, 35*(4), 1069-1080. https://doi.org/10.1016/j.adolescence.2012.02.014

Låftman, S. B., Östberg, V., & Modin, B. (2017). School climate and exposure to bullying: A multilevel study. *School Effectiveness and School Improvement, 28*(1), 153-164. https://doi.org/10.1080/09243453.2016.1253591

Li, L., & Zhu, J. (2020). Peer Victimization and Problematic Internet Game Use among Chinese Adolescents: A Moderated Mediation Model of School Engagement and Grit. *Current Psychology*, 1-8. https://doi.org/10.1007/s12144-020-00718-z

Marini, Z. A., Dane, A. V., Bosacki, S. L., & Cura, Y. (2006). Direct and Indirect Bully-Victims: Differential Psychosocial Risk Factors Associated with Adolescents Involved in Bullying and Victimization. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression, 32*(6), 551-569. https://doi.org/10.1002/ab.20155

Menesini, E., & Salmivalli, C. (2017). Bullying in Schools: The State of Knowledge and

Effective Interventions. *Psychology, Health & Medicine, 22*(sup1), 240-253. https://doi.org/10.1080/13548506.2017.1279740

Modecki, K. L., Minchin, J., Harbaugh, A. G., Guerra, N. G., & Runions, K. C. (2014). Bullying Prevalence across Contexts: A Meta-Analysis Measuring Cyber and Traditional Bullying. *Journal of Adolescent Health, 55,*(5), 602-611. https://doi.org/10.1016/j.jadohealth.2014.06.007

Montañés, M., Bartolomé, R., Parra, M., & Montañés, J. (2009). El problema del maltrato y el acoso entre iguales en las aulas. *Ensayos, 24,* 1-13.

Moyano, N., Ayllon, E., Antoñanzas, J. L., & Cano, J. (2019). Children's Social Integration and Low Perception of Negative Relationships as Protectors Against Bullying and Cyberbullying. *Frontiers in Psychol.gy, 22*(10), 643. https://doi.org/10.3389/fpsyg.2019.00643.

Mucherah, W., Finch, H., White, T., & Thomas, K. (2018). The Relationship of School Climate, Teacher Defending and Friends on Students' Perceptions of Bullying in High School. *Journal of Adolescence, 62*(1), 128-139. https://doi.org/10.1016/j.adolescence.2017.11.012

Nocentini, A., De Luca, L., & Menesini, E. (2019). The Teacher's Role in Preventing Bullying. *Frontiers in Psychology*, *10*, 1830. https://doi.org/10.3389/fpsyg.2019.0

Olthof, T., & Goossens, F. A. (2008). Bullying and The Need to Belong: Early Adolescents' Bullying-Related Behavior and The Acceptance They Desire and Receive from Particular Classmates. *Social Development, 17*(1), 24-46. https://doi.org/10.1111/j.1467-9507.2007.00413.x

Olweus, D. (1993). *Bullying at School: What We Know and What We Can Do.* Blackwell Publishing. https://doi.org/10.1002/pits.10114

Pardo, A., Ruiz, M. A., & San Martín, R. (2014). *Análisis de datos en ciencias sociales y de la salud I.* Editorial Síntesis.

Parada, J. L. (2010). La educación familiar en la familia del pasado, presente y futuro. *Educatio Siglo XXI, 28*(1), 17-40. https://revistas.um.es/educatio/article/view/109711

Patton, D., Sung, J., Patel, S., & Kral, M. (2017). A Systematic Review of Qualitative Research on School Bullying and Victimization. *Trauma Violence Abuse, 18*(1), 3-16. https://doi.org/10.1177/1524838015588502

Pepler, D., Jiang, D., Craig, W., & Connolly, J. (2008). Developmental Trajectories of Bullying and Associated Factors. *Child Development, 79*(2), 325-338. https://doi.org/10.1111/j.1467-8624.2007.01128.x

Peris, M., Maganto, C., & Garaigordobil, M. (2018). Scale of Risk of Addiction to Social Networks and Internet for Adolescents: Reliability and Validity (ERA-RSI). *Revista de Psicología. Clínica de Niños y Adolescentes, 5*(2), 30–36. https://doi.org/10.21134/rpcna.2018.05.2.4

Polo del Río, M. I., Mendo Lázaro, S., Fajardo Bullón, F., & León del Barco, B. (2017). Una intervención en aprendizaje cooperativo sobre el perfil del observador en la dinámica bullying. *Universitas Psychologica, 16*(1), 1-13, https://doi.org/10.11144/Javeriana.upsy16-1.iacp

Ramírez, D., Ferrás, L., & Varona. L. (2019). La convivencia escolar, un reto en la sociedad actual. *Roca: Revista científico - educacional de la provincia de Granma, 15*, 112-123. https://revistas.udg.co.cu/index.php/roca/article/view/661/1165

Rigby, K. (2020). How Teachers Deal with Cases of Bullying at School: What Victims Say. *International Journal Environmental Research and Public Health 17*(7), 2338. https://doi.org/10.3390/ijerph17072338

Roland, E., Bru, E., Midthassel, U. V., & Vaaland, G. S. (2010). The Zero Programme against Bullying: Effects of the Programme in the Context of the Norwegian Manifesto against Bullying. *Social Psychology of Education, 13*(1), 41-55. https://doi.org/10.1007/s11218-009-9096-0

Shin, Y. (2010). Psychosocial and Friendship Characteristics of Bully/Victim Subgroups in Korean Primary School Children. *School

Psychology International, 31(4), 372–388. https://doi.org/10.1177/0143034310377296

Sjursø, I. R., Fandrem, H., O'Higgins Norman, J., & Roland, E. (2019). Teacher Authority in Long-Lasting Cases of Bullying: A Qualitative Study from Norway and Ireland. *International Journal Environmental Research and Public Health, 16*(7), 1163. https://doi.org/10.3390/ijerph16071163

H. Smith, K. Polenik, S., Nakasita, & Jones, A. P. (2012) Profiling Social, Emotional and Behavioural Difficulties of Children Involved in Direct and Indirect Bullying Behaviours. *Emotional and Behavioural Difficulties, 17*(3-4), 243-257. https://doi.org/10.1080/13632752.2012.704315

Suárez, E., Roldán, J. L., & Calvo-Mora, A. (2014). A Structural Analysis of the EFQM Model: An Assessment of The Mediating Role of Process Management. *Journal of Business Economics and Management, 15*(5), 862–885. https://doi.org/10.3846/16111699.2013.776627

Toner, B. K. (2010). *The Implementation of the Bully Prevention Program: Bully Proofing Your School and Its Effect on Bullying and School Climate on Sixth Grade Suburban Students.* ProQuest LLC, Ed.D. Dissertation, Widener University.

Torroella, G. (2007). Aprender a vivir. *Educación: una revista cubana que hace esencia al pensamiento, 121,* 53-56.

Unesco. (2015). Rethinking Education. Towards a Global Common Good? Unesco. https://unesdoc.unesco.org/ark:/48223/pf0000232555

van der Ploeg, R., Steglich, C., & Veenstra, R. (2016). The Support Group Approach in the Dutch Kiva Anti-Bullying Programme: Effects on Victimisation, Defending and Well-Being at School. *Educational Research, 58*(3), 221-236. https://doi.org/10.1080/00131881.2016.1184949

Volk, A. A., Provenzano, D. A., Farrell, A. H., Dane, A. V., & Shulman, E. P. (2019). Personality and Bullying: Pathways to Adolescent Social Dominance. *Current Psychology, 40,* 1-12. https://doi.org/10.1007/s12144-019-00182-4

Williams, K. R., & Guerra, N. G. (2007). Prevalence and Predictors of Internet Bullying." *Journal of Adolescence Health, 41*(6), S14-S21. https://doi.org/10.1016/j.jadohealth.2007.08.018

Wong, C. Y., & Wang, L. (2015). Trajectories of Science and Technology and Their Co-Evolution in BRICS: Insights from Publication and Patent Analysis. *Journal of Informetrics, 9*(1), 90-101. https://doi.org/10.1016/j.joi.2014.11.006

Yang, J., Wang, X., & Lei, L. (2020). Perceived School Climate and Adolescents' Bullying Perpetration: A Moderated Mediation Model of Moral Disengagement and Peers' Defending. *Children and Youth Services Review, 109,* 104716. https://doi.org/10.1016/j.childyouth.2019.104716

Zych, I., Farrington, D. P., & Ttofi, M. M. (2019). Protective Factors against Bullying and Cyberbullying: A Systematic Review of Meta-Analyses. *Aggression Violent Behaviour, 45,* 4-19. https://doi.org/10.1016/j.avb.2018.06.008

Notes

*   Research article.