Bullying's Negative Effect on Academic Achievement

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Abstract

Bullying carries great harm for all involved, undermining academic achievement as well. The strength of such impact is yet to be clarified, existing many possibilities and variables to analyze – classroom behavior being one.

The present cross-sectional investigation goal was to study the impact of bullying (mediated by the classroom behavior) on the academic achievement.

Participants consisted of 288 children (from the 1st to 4th school years), 51% females and 49% males, and an average age of: M= 8.09 years (SD = 1.193; Min = 7.94, Max = 8.21). Children filled out a self-report questionnaire on bullying; their teachers reported on classroom behaviors and academic achievement.

Results showed that the bullying situation itself, didn't significantly explain the academic achievement of those involved. Indirect effects were found for both victims and perpetrators. Victims revealed worse school results through worse classroom behavior (specifically, excessive motor activity). Aggressor presented worse school results through worse classroom behavior (specifically, opposition behavior, excessive motor activity, and hyperactivity).

These results highlight the importance of the educational agents' attention to the existing behaviors in their classrooms, not only to the disruption established in each classroom's environment, but as a possible sign of an involvement in the existing bullying dynamics.

Keywords: Bullying, bully, victim, classroom behavior, academic achievement

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El Efecto Negativo del Bullying en los Resultados Académicos

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Resumen

El bullying causa enorme daño a todos los implicados, perjudicando también sus resultados académicos. Tal impacto todavía está por aclarar, existiendo muchas posibilidades y variables por analizar – el comportamiento en el aula es una. El objetivo de la presente investigación transversal fue estudiar el impacto del bullying (mediado por el comportamiento en el aula) en el desempeño académico. Los participantes consistieron en 288 menores (del 1º al 4º año escolar), 51% niñas y 49% niños, y una edad media de 8.09 años (SD= 1.193; Min= 7.94, Max= 8.21). Los alumnos respondieron un cuestionario de autorreporte sobre bullying, sus profesores reportaron comportamientos en el aula y resultados académicos. Los resultados mostraron que la situación de bullying en sí no explicaba significativamente los resultados académicos dos involucrados. Se encontraron efectos indirectos tanto para las víctimas como para los perpetradores. Las víctimas revelaron peores resultados escolares mediante peores comportamientos en el aula (específicamente, actividad motora excesiva). Los agresores presentaron peores resultados escolares mediante peores comportamientos en el aula (específicamente, comportamientos de oposición, actividad motora excesiva e hiperactividad). Se evidencia la importancia de la atención de agentes educativos a las conductas existentes en sus aulas, a las perturbaciones establecidas, y a las posibles señales de participaciones en existentes dinámicas de bullying.

Palabras clave: Bullying, agresor, víctima, comportamiento en el aula, desempeño académico

Bullying implies repeated actions of aggression (whether is physical, verbal or relationship focused) that features a prolongation in time and a physical or web network context (Smith et al., 2008). In the bullying situation, one can play different roles, namely the bully and the victim (Boulton & Smith, 1994). This relationship implies an unbalance of power between individuals, where the first (the bully) exerts dominance and coercion over the second (the victim) (Olweus, 2012).

Bullying can happen in a quiet way where only the perpetrator and the victim interact, or it can happen in a social context and in high-profile conditions, such as in a school. In this context, some colleagues may witness bullying behaviors by reacting pro-socially either by defending the victim and expressing disapproval to the aggressor or by supporting the aggressor. Failure to react at all may also express tacit approval of that behavior. Bullying is a behavior that affects all the subjects involved and manifests complex interdependencies leading to a negative impact on various dimensions of the individual. If it occurs in the school context, it influences the attitude of the actors in that context (Van der Ploeg, Steglich, & Veenstra, 2020). Bullying can occur in many ways, the most common being physical, verbal, material, relational, and cyberbullying.

In a previous study developed by Gomes, Ferreira, Silva, and Castro Caldas (2017), using a sample of 883 participants, victims of bullying represent 69.5% of the sample and non-victims account for 30.5%. This showed a high prevalence of bullying in the school universe being a major problem in schools. Therefore, we are interested in investigating the consequence of these aggressive behaviors among school-age children.

The victims are more vulnerable to depression, low self-esteem, poor self-image. A lot of victims come up with psychosomatic disorders (with a variety of reported pains), anxiety, sleep disorders, social isolation and affection related disorder (Gomes, 2014). Meanwhile bullies have a tendency to delinquency, higher psychiatric risk, substance abuse, antisocial behavior, violence and criminal activity (Gomes, 2014).

The levels of violence against children are frighteningly high and it is estimated that up to one billion children between the ages of 2 and 17 have been victims of some form of violence (Ferrara, Franceschini, et al. 2019). Very few studies have provided data on physical violence at school, but it can have a worrying impact, causing psychological distress, permanent physical

disability and long-term physical or mental illness. Children who have been bullied at school may develop physical inactivity, overweight or obesity, diabetes, smoking, excessive alcohol consumption, physical health problems such as heart disease, respiratory diseases. Data from international studies clearly show that violent school experiences are relate to worse school results (Ferrara et al. 2019).

Bullying and Academic Achievement
Within the dimensions vulnerable to the adverse effects of bullying, there is the variable academic achievement (Moore et al., 2013). Data that supports this connection is feeble especially when taking into consideration the victims (Beran 2008, Hanish & Guerra, 2002; Kochenderfer & Ladd 1996).

Nakamoto and Schwartz (2010) found a small but significative association between both in their meta-analysis. Authors acknowledge the need to explore other variables in order to explain this association (e.g., Buhs, 2005; Nakamato & Schwartz; 2010; Schwartz, Gorman, Nakamoto & Toblin, 2005; Troop-Gordon e Kuntz, 2010; Vaillancourt & McDougall, 2013).

In a study with 3rd and 4th grade students, Troop-Gordon and Kuntz (2010) found that children who are victims of bullying and have a bad teacher-student relationship tend to have a higher risk of poor academic development, in comparison with children that have a solid relationship with their teacher. In a sample of Portuguese students (between 5th and 7th grade students) it was found that teacher attachment (measured in terms of communication and mutual acceptance) positively contributed to the academic investment and success (Sousa Machado, Tomás da Silva, Pacheco Miguel & Vieira, 2018).

McMillan, Myran & Workman (2002), consider that low academic performance could be explained by aspects such as classroom behaviour and students' performance in the tasks assessed (within the same classroom environment). Other authors emphasize variables such as depression and its role as a mediator with academic involvement (Schwartz, Gorman, Nakamoto, & Toblin, 2005; Buhs, 2005).

Considering that the anti-social, delinquent and aggressive behavior has a negative impact on grades and academic engagement (Coie, Dodge, & Lynam, 2006) it is possible that being a bully may negatively impact the academic achievement.

The involvement in bullying dynamics (for example, threatening to end a friendship depending on a specific behavior; ill-speak on someone to others) as shown in literature (Hymel, Comfort, Schonert-Reichl, & McDougall, 1996) puts children at risk for academic failure and abandonment. Despite this risk, and opposite to the conventional conception, bullies do not have deficient social-cognitive skills (Camodeca, Goossens, Schuengel, & Meerum Terwog, 2003). These skills are in fact important to the academic achievement.

A positive association was found between relational aggression and expressive and receptive vocabulary evaluation (Bonica, Arnold, Fisher, Zeljo, & Yershova, 2003). It was also verified that involvement in self-reported bullying behaviors (acknowledged by those involved) is associated with a higher academic achievement (Woods &Wolke, 2004). It is noteworthy that in this context these children have higher ability to manipulate peers (Garandeau & Cillessen, 2006; Sutton, Smith, & Swettenham, 1999).

Risser (2012) also found the existence of a negative association between academic achievement and manifested relational aggression with boys of the fourth and fifth grade. Manifested relational aggression was a predictor of academic achievement. When the manifested aggression is controlled, relational bullying appears as the only predictor of lower academic achievement among girls of the fourth and fifth grade. These results advance the fact that when girls involve themselves in these behaviors it clearly contributes to a decrease in their class performance. Violence and bullying are significantly associated with lower grades. Students in schools with higher levels of bullying have worse academic results. So, the school environment affects academic achievement, and this is true for all students, regardless of previous exposure to violence. Moore, Norman, Suetani, Thomas, Sly and Scott (2017) revealed an association between childhood bullying victimization and poor academic performance. In addition to negatively influence academic performance there is also a relationship between bullying victimization and an increased tendency to consume alcohol, loneliness, obesity, overweight, and psychosomatic symptoms. Experiences of bullying victimization and observation of bullying behaviours impact on the behaviour and mental health of children and adolescents, as well as on their academic outcomes. When a child has cumulative experiences for 5 years as a victim, aggressor, or viewer of bullying behaviors, they will manifest greater difficulties in academic performance, revealing less optimism in the future,

low self-esteem, and mental health symptoms (Evans, Smokowski, Rose, Mercado, & Marshall, 2019). Forster, Gower, Gloppen, Sieving, Oliphant, Plowman, Gadea and McMorris (2019) demonstrate that when students and teachers develop affectionate relationships among themselves there is less likelihood for bullying behaviors. Students who experience bullying behaviors, such as victimization, are less involved with the school and its outcomes. Schools that foster affective attachment between teachers and their students stimulate behavioral, emotional and cognitive involvement in general by promoting protective effects and improving school performance. School bullying exists in all schools, whether public or private. The existence of bullying in a school setting negatively affects the academic outcomes of both victims and aggressors (Al-Raqqad, Al-Bourini, Talahin, & Aranki, 2017). Victims of bullying have higher levels of depression and lower levels of interest in school (Stefanek, Strohmeier, & Takuya, 2017).

Bullying behaviors reveal an association with academic performance. Being a victim is associated with poorer academic performance but being an aggressor may not. Therefore, involvement in bullying behaviors as a victim or aggressor may have different implications for the academic performance (Clemmensen, et al. 2020).

Classroom Behavior and Academic Achievement
Another variable that can have an effect on academic achievement (namely, on students being approved or disapproved) is their classroom behavior. On the student part, this can be defined by challenging behaviors shown to the teacher (disregard, impulsiveness and disobedience or noncompliance with the rules). Those behaviors are presented in a range of 12 to 20% of American students (Fabiano, Pelham et al., 2013). Notwithstanding classroom behavior often appears to be superimposed to Attention Deficit Hyperactivity Disorder (ADHD) as demonstrated in recent studies. Other studies explored the impact of teacher classroom management strategies on first grade students. Within this sample 92.7% of individuals filled in the criteria for Attention Deficit Hyperactivity Disorder (ADHD), with 69.1% of them presenting combined symptomatology (Owens et al., 2017).

The victims of bullying often feel ridiculed because they are threatened, pinched, bitten, beaten, invited to fight. The emotions they experience after being bullied are anger, guilt, fear, sadness, boredom, pain, hopelessness,

feeling of not being accepted, anxiety. For aggressors the emotions experienced after the aggression are anger, sadness, guilt, regret, anxiety. For the viewer, emotions arise after witnessing bullying are sadness, anxiety and fear (Kustanti, Rahmandani, & Febriyanti, 2020). All emotions involved in bullying behaviors, whether as a victim, aggressor, or spectator, are potentially negative and enable the child to establish a bad relationship with the school context with implications for classroom behavior, motivation, and academic achievement (Kustanti, Rahmandani, & Febriyanti, 2020).

Academic provocation among students in a classroom context, like other forms of malicious provocation and intimidation, has negative consequences on academic achievement, as students hide the academic effort with the school, and teachers may believe that these students are not interested in the school. Classroom management skills and classroom behaviour are strong predictors of students' academic achievement. They react with frustration and using academic provocation, when classroom environments are inefficient, and when teachers are no longer interested in them. Students who experience negative school climates where bullying behaviors exist are more likely to engage in self-sabotage behaviors, including concealment and containment of academic effort, which impairs academic achievement (Dietrich & Hofman, 2020).

Bullying, Attention Deficit Hyperactivity Disorder (ADHD), and Academic Achievement

Attention Deficit Hyperactivity Disorder (ADHD) is one of most common neurodevelopmental disorders in childhood and impacts both academic achievement (e.g., school outcomes) and social adjustment (e.g., bullying), (Faraone, Sergeant, Gillberg, & Biederman, 2003; Gau, Chong, Chen & Cheng, 2005). Within the challenges that ADHD carries, those that may negatively influence academic achievement and social functioning are: attention problems and, on other hand, hyperactive and disruptive behaviors (such as hyperactivity and impulsivity).

Attention problems may limit children's with ADHD opportunities to acquire (and learn) both classroom skills and teaching materials (Frick et al., 1991) or even to learn essential and needed social skills to have positive interactions with others (Landau & Milich, 1988), such as skills that the

human being acquire through observational learning (Wheeler & Carlson 1994).

Hyperactive and disruptive behaviors may result in even more irritability and socially inappropriate behavior in the social context in question. This hinders children's opportunities to participate fully and appropriately in the classroom (Whalen & Henker, 1985), which may reduce their ability to learn from peers and teachers (for example, if a child misbehaves and goes to time-out, it stops the learning process) (Frick et al., 1991).

Research data succinctly points out that ADHD's characteristic symptoms, are negatively associated with academic achievement. It is typical of hyperactive children to present difficulties to concentrate on a single task, since they are usually working on multiple tasks simultaneously. This transposes to a difficulty to pay attention to classes and remember learned material (Barkley, 2003).

Children with attention deficit and hyperactivity disorder (ADHD) often reveal fewer friendships, more difficulties in social interaction in a constructive way by developing intimidating behaviors towards others and less confidence in their ability to participate in the activities of their peers. They often experience depressive and anxiety disorders (Lange, 2018).

Due to bullying behaviors in the classroom, students are unable to fully concentrate on their work activities, do not participate in class, and find it more difficult to follow the teacher's instructions and eventually disconnect from their studies. If the victim suffers from ADHD, being under anxiety and fear makes it easier to distance oneself from learning and their inattention or dysfunctional behavior may become accentuated. On the other hand, the impulsiveness presented in ADHD can also be a factor that promotes behavior disorders in a classroom context and enables aggressive behavior towards colleagues (Lange, 2018).

School Evaluation and Academic Achievement
Although is common sense that in terms of school evaluations the grades achieved by students at each moment of formal evaluation is the most important factor (McMillan et al., 2002) there are other elements that weigh in each student's final evaluation and test.

Literature shows evidence of a tendency for teachers to reward a mixture of attitude, effort and performance to a certain degree (Brookhart, 1991, p. 36;

Cross & Frary, 1996). Teachers base their assessment on two major domains: academic achievement and social behavior, the former being the most valued at an elementary level. However, teachers are a very important element in developing correct classroom behaviour and good test results (Chetty, et al. 2014). Marso and Figge (1993) gathered data from various investigations, and summarily these authors enhanced that teachers have a preference for other methods of assessment besides the traditional written in paper with pencil assessments.

Brookhart (1994) concluded that test scores contributed significantly to the final grade and that student effort and ability were also important as a parameter of evaluation. As defended by Airasin (1984) elementary teachers rely more on informal and observational evidences, while high school teachers use performance testing, written assessments as their main means of assessments. Interestingly, disruptive student behavior had no impact on students' academic achievement. Or if so, on their teachers' evaluation of them (McMillan et al., 2002). Which would logically make sense to happen, as the students (while in the classroom) would tend to exert little effort and tend to not participate actively. Despite this, poor academic achievement (in particular, of the bullies) might not have to do with the repercussions of engaging in violent behavior.

Objective and Hypothesis

Previous research has explored the role of bullying on academic performance, both from the perspective of the aggressor and the victim. There seems to be a tendency to recognize the negative effect of bullying on academic performance, but empirically there are doubts about the strength of such a relationship and even doubts about the very direction of the relationship between these constructs (whether it is positive or negative) as well as on the main mechanisms linking bullying to academic performance. This study seeks to clarify the relationship between bullying behaviors and school performance and test classroom behaviors in bullying victims and aggressors as a potential mediator of this relationship.

It is also interesting to study the impact of classroom behavior on academic performance. This relationship may be associated with a direct impact (when the student is not focused, is not able to capture the information, and therefore is likely to have a bad grade) or an indirect impact (when the student exhibits

behavior that is opposite to what the teacher expects. This may also have a negative influence on your assessment of academic performance).

Additionally, we want to look at what disruptive behaviors occur in the classroom, and to explore if are part of the group of behaviors that frame Attention Deficit Hyperactivity Disorder (ADHD). We want to verify if aggressors have behaviors that fit Attention Deficit Hyperactivity Disorder (ADHD). It is hypothesized that involvement in bullying dynamics manifests itself as harmful to classroom environments, which will also affect school performance.

Method

Participants and Procedures

Participants were 288 students and their 13 teachers. The students were elementary school attendees in both public and private schools from the central part of the country (from Lisbon's district). The age range is between 6 and 11 years old. Of the participants, 147 were female (51%) and 141 were male (49%). In regard to the existing school years, 19.8% of the students attended the 1st grade, 20.1% the 2nd grade, 31.6% the 3rd grade and 28.5% the 4th grade. Among them, 215 (74.7%) attended a public school and 73 (25.3%) a private school. The mean and standard deviation of the students' age were: $M = 8.09$ years (SD = 1.193; Min = 7.94, Max = 8.21).). In detail, the mean and standard deviation of the 1st grade attendees were: $M = 6.54$ years ($SD = 0.537$); of the 2nd grade were: $M = 7.33$ years (SD = 0.509); of the 3rd grade were: $M = 8.40$ years ($SD = 0.594$); and of 4th grade were: $M = 9.38$ years ($SD = 0.621$).

The researchers went to the schools and asked their principals for permission. After obtaining the permissions, the sample was collected during the second half of the school year.

The participants' data were identified with a personal code to protect the child's identity. Participants were informed about the characteristics of the research and the purpose for which their data would be used. All of the parents of the children gave their written consent, as did the children themselves.

The students' socio-demographic characteristics were first assessed, followed by bullying and behavioral measures. The children's teachers filled out the Conners Teachers Scale to assess the children's behavior and returned

it after a week. The application of the full protocol took place in the classroom, with the help of the teacher, and took 20 to 30 minutes.

Measures

Bullying. The Bullying Scale (Olweus, 1989; Portuguese version by Pereira & Tomás, 1994; and revised by Melim, 2010) assesses different components related to the involvement in bullying - either as bully or as victim. For this reason, the questionnaire is organized into three sections. The first addresses the sociodemographic information (7 questions), the second one aspects related to being a victim (consisting of 10 questions, for example "How often have you been bullied since the beginning of the school term?") and the third one aspects related to being a bully (composed of 5 questions, one of wich is "How often have you taken part in bullying others since the beginning of the term?").

Cronbach's alpha in the present study was .80 to the total score.

Classroom behavior. The reduced version of the Conners for Teachers scale (Conners, 1997) aims to evaluate characteristic symptoms of Attention Deficit Hyperactivity Disorder (ADHD). This scale consists of 28 items, each of them distributed over 4 subscales:

Oppositional problems (from which belongs the item: "Actively defies or refused to comply with adults' requests"); Absence of attention/cognitive problems ("Inattentive, easily distracted"); problems of motor over-activity ("She/He can't keep him/herself calm"); and finally an Attention Deficit Hyperactivity Disorder (ADHD) index that is answered by the teachers and alludes to the child's behavior, using a 4-point Likert scale ranging from 0 (Never) to 3 (Very Frequently). The higher the scores (both from the subscales or from the overall outcome of the scale) the more severe are the ADHD's symptoms.

In the present study, a Cronbach's Alpha of .97 was obtained for the total score. And for each factor, the following Cronbach's Alphas were obtained: .91 for the "oppositional problems" factor; .90 for the inattention/cognitive problems factor; .92 for "motor over-activity problems" and finally, .87 for the ADHD index.

Academic Achievement. The Academic Achievement Rating Scale aims to measure the greater or lesser academic success and is reported by the teacher. It is based on a single item where teachers select the option that best

describes and characterizes each student performance. It is a Likert scale with five response options: 1 (Insufficient), 2 (Sufficient), 3 (Good), 4 (Very Good) and 5 (Excellent). The higher the score given by the teacher, the better it is the student's academic achievement.

Data Analysis

Data was analyzed using the statistical program SPSS (Statistical Package for the Social Sciences - version 24) for Windows. Descriptive statistics (means and frequencies) were calculated to characterize the participants and were calculated for all measures of the present study. Normality analysis were performed using the Kolmogorov-Smirnov test. No outliers were found following the graphical representation of the results. It was verified whether the collected data met the statistical assumptions necessary to advance to the data analysis, namely - Linearity, Homoscedasticity and Normality. Correlations were calculated between all study variables.

In order to find whether the oppositional behaviors (Mediator), inattention/cognitive problems (Mediator), motor over-activity problems (Mediator), and Attention Deficit Hyperactivity Disorder ADHD index mediated the relationship between aggression/victimization (Independent Variables) and the academic achievement (Dependent Variable) the PROCESS macro for SPSS (version 3.0) was used (Hayes et al. 2017).

This macro uses ordinary minimal squares or a trajectory based on an analytical strategy of the Bootstrapping Logistic Regression, a nonparametric test that does not violate the normality assumptions that was used to assess indirect effects. The indirect effect is considered to be significant if the 95% confidence interval does not contain 0.

Several models were tested to assess the indirect effects of behavioral problems on the association between being a victim and academic achievement. The same was done to assess the indirect effects of behavioral problems on the association between being an aggressor and academic achievement.

Results

Means, standard deviations and frequencies can be found in the Table 1. As for correlations, the relationships between victimization/aggression and

student academic achievement were low and statistically non-significant, since the values obtained were $r = .057$ ($p > 0.5$) for victimization and $r = -.009$ ($p > 0.5$) for aggression.

Table 1: Descriptive Statistical Analysis

Variable	M	SD	1	2	3	4	5	6	7
Victimization	.69	-	-	.21**	.06	.04	.01	.14*	.15*
Aggression	-	-	.21**	-	-.01	.21**	.06	.19**	.23**
Academic Achievement	2.98	1.034	.06	-.01	-	-.19**	-.61**	-.25**	-.36**
Opposition Behaviors	1.48	2.820	.04	.21**	-.19**	-	.35**	.80**	.75**
Cognitive Problems/Inattention	2.54	3.561	.01	.06	-.61**	.35**	-	.48**	.64**
Excessive Motor Activity	2.77	4.494	.14*	.19**	-.25**	.80**	.48**	-	.92**
Index of HAD	5.53	7.132	.15*	.23**	-.36**	.75**	.64**	.92**	-

*$p < .05$; **$p < .01$*

All the correlation between victimization and variants aspects of classroom behavior were low. Only motor over-activity ($r= .137$, $p < 0.05$) and hyperactivity index and attention deficit ($r= .157$, $p<0.05$) were statistically significant.

Correlations between aggression and aspects of classroom behavior were small as well. Oppositional behaviors ($r= .209$, $p< 0.01$), motor over-activity ($r= .185$, $p< 0.01$), hyperactivity index, and attention deficit ($r= .226$, $p< 0.01$) were the ones revealed to be statistically significant

In contrast to these last results and in regard to the correlations between aspects of classroom behavior and academic performance, only the oppositional behaviors showed a weak correlation ($r= -.193$, $p< 0.01$),

revealing a statistically significant but negative association. Also showing the same type of associations with motor activity ($r= -.246\ p< 0.05$); hyperactivity index; and attention deficit ($r= -.363\ p< 0.05$), revealing medium associations. Meanwhile cognitive problems/inattention showed a positive (and strong) correlation ($r=.61\ p< 0.05$).

Regarding the victims, there was only one significant and indirect effect throughout behavioral disturbance –excessive motor activity [*indirect effect* = -.08; 95% *CI* (-.143, -.017); *R2* = 7%]. Being a victim seems to be associated with greater motor activity in the classroom, and this type of behavior seems to be associated with poorer academic performance.

Regarding bullies, three significant indirect effects were found through behavioral problems: opposition behaviors [*indirect effect* = -.08; 95% *CI* (-.145, -.032); *R2* = 4%], excess of motor activity [*indirect effect* = -.09; 95% *CI* (-.164, -.034); *R2* = 6%] and hyperactivity [*indirect effect* = -.13; 95% *CI* (-.215, -.036) *R2* = 15%]. From these results, it seems that being abusive is associated with more oppositional behaviors, more motor activity and more classroom hyperactivity, and these types of behaviors seem to be associated with poorer academic performance.

Discussion

In this study, we explored the association between bullying and academic achievement and explored the potential mediating role of classroom behavior on this association.

Associations between bullying and academic achievement were small and non-significant. These results confirm the empirical fragility found in the relationship between these variables. The explanation for those results seems to be related to the bullying phenomenon. Especially since its expression is found in a variety of forms, according to the role - victim or bully.

It is important to mention that victimization was significantly associated with the excess of motor activity. This relationship may be the reflection of the presence of depressive or anxious symptomatology following episodes of victimization (Lansford et al., 2007; Oldehinkel et al., 2007). Evans, Smokowski, Rose, Mercado, and Marshall (2019) assume that bullying behaviors have an impact on children's behavior and mental health. When a child has cumulative experiences for 5 years as a victim, aggressor, or viewer

of bullying behaviors, they will reveal less optimism in the future, low self-esteem, and mental health symptoms.

It can also be alluded that aggression also correlates in a significant way to the excess of motor activity; and to oppositional behavior and Attention Deficit Hyperactivity Disorder (ADHD) index as well, indicating a generalized problematic, behavior wise (which can be the result of a diagnostic comorbidity of typical symptoms that are characteristic of ADHD since the co-occurrences of both of this diagnostics in children are usual and significant) (APA, 2013).

Taking in consideration the previous points, it seems that victims eventually tend to present depressive symptomatology (Hawker & Bolton, 2000; Healy & Sanders, 2018) and anxious symptomatology following victimization episodes. That anxiety manifestation is harmful in a classroom environment, and in this way compromises the academic achievement (Schwartz et al., 2005). On their part, bullies might have a possible mix of symptoms (Opposition Perturbation and Attention Deficit Hyperactivity Disorder ADHD) that when expressed in a classroom environment result in a reduced academic performance.

The bullying phenomenon is a complex one, and that is reflected in the results of this investigation –on the low and non-significant direct correlations, and on the existence of both negative and positive correlations (inverted correlations). For example, this study obtained a negative correlation between victimization and the academic achievement in contrast to other studies who found a positive correlation. In addition to this incoherence, the relationship between aggression and academic achievement also differs from what was revised from the literature like studies of Moore, Norman, Suetani, Thomas, Sly & Scott, 2017; Al-Raqqad, Al-Bourini, Talahin, & Aranki, 2017; Kustanti, Rahmandani, & Febriyanti, 2020; Clemmensen, et al. 2020. All these studies have revealed a direct relationship between bullying behaviour and a decline in academic performance.

With these findings, indirect and significant effects obtained corrupt the idea that either a victim or a bully that exerts a negative behavior (in the classroom environment), will have negatives repercussions on the academic achievement. Following not having been found results that were totally significant and effects that were fully direct (with the exception of the effect

found between bullying involvement), other models and other explanations must be taken into consideration.

It is worth to mention the proposal made by Jeffrey Young derived from the Schema-Focused Therapy (Young, Klosko, & Weishaar, 2003). From its theoretical conceptualization, is interesting the definition of the concept of coping styles (processes of schema maintenance) of Young et al. (2003). Three styles are defined: processes of maintenance, of avoidance, and of schema compensation. As whole these three styles form the usual response of the individual when a certain premature and ill-adaptive schema emerges following non satisfied emotional needs (Young et al., 2003).

According to the finding presented here, and following the coping style mentioned, the academics results obtained will differ from style to style. In the victims' case that is particularly noticeable, since the use of an avoidance of schema will be most probable. Which it can mean that following the victimization phenomenon, they develop a negative self-image that manifests itself forming a depressive and anxious symptomatology, which in turn will translate itself to an academic disinvestment (Caputo, 2014), reflected also on a poorer academic achievement.

In contrast with these students, other colleagues will tend to involve themselves in processes of schema compensation, mobilizing themselves to antagonize that same poor self-image by strongly investing on the academic part of their lives (for example, by studying more hours), and that will resonate on a better academic achievement.

Studies focused on bullies demonstrate that they will also present a poor image of themselves (Jevtić & Mikanović, 2017; O'Moore & Kirkham, 2001), assuming globally a behavior of challenge to rules and authority figures. That same behavior can be manifested on a classroom environment when they systematically challenge their teacher authority as a possible way to capture their peers' attention as a way to be recognized as dominant by the same peers (Olthof, Goossens, Vermande, Aleva & van der Meulen, 2011; Rodkin, Espelage & Hanish, 2015). This can be translated on a schema of compensation that will end up harming their (direct or indirect) evaluation made by their teacher.

It can also be considered that some children who objectively have superior cognitive resources (in comparison to others), to whom school experience is extremely noxious, may present a disinvestment on school since they do not

believe it to be worth it. In this case, we were speaking about a process of an avoidance schema.

Yet, from another point of view and as mentioned behindhand, there are students with superior social-cognitive skills (Bonica et al., 2003) allowing them a better academic achievement and easily investing themselves in bullying dynamics. For example, by manipulating peers (Garandeau & Cillessen, 2006; Sutton, Smith, & Swettenham, 1999).

Schools should be concerned about bullying and develop prevention and intervention programs; by doing so they are promoting positive school and psychosocial outcomes.

Conclusion

Bullying is a complex phenomenon that can create results that tend to be differentiated and multifaceted. This study explored the behavior in the classroom, indirect effects were found for both victims and perpetrators. Being a victim was associated with worse school results through worse classroom behavior (specifically, more excessive motor activity). Being an aggressor was associated with worse school results through worse classroom behavior (specifically, opposition behavior, excessive motor activity, and hyperactivity). It seems that in this population school results are being influenced by classroom behavior. In the case of victims, it is the excess of motor activity that indirectly disturbs school performance and in the case of aggressors it is the opposition behaviors, excess motor activity and hyperactivity that indirectly and negatively influence school results.

However, it is still to be investigated the role of many other factors such as depression, anxiety, self-centered believes, self-esteem, empathy, emotional intelligence and finally, self-concept, among others.

These issues also highlight the importance of the involvement and attention of educational agents (particularly, the teacher's involvement) in regard to the existing behavior in the classroom, not just simply because of the provoked disruption. But also, mainly because the child's behavior is a sign or symptom of the child's involvement in bullying dynamics (which are extremely noxious). This same sign also can reveal difficulties in emotional regulation. Teachers can have a very important role on the evolution of events, either by the relationship that they build with their students (Troop-Gordon & Kuntz,

2013; Sousa Machado et al., 2018) or by the evaluation that they attribute to each student.

It is well known that a well-succeeded teacher-student interaction in a classroom environment is determinant to the student's emotional, educational and social development. Fomenting a positive and empathic relationship is a promotor of greater levels of academic motivation and prevents behavioral problems in the classroom environment. The higher the emotional support felt by the students is, the higher their involvement in the learning process will also be (Jones, Bouffard, & Weissbourd, 2013). Positive relationships between teachers and students can act as a muffler against the potentially adverse effects that bullying might have on students' academic achievement. The quality of the relationship between teachers and students is crucial and as such should be a focus of attention in the school context. Forster, Gower, Gloppen, Sieving, Oliphant, Plowman, Gadea and McMorris (2019) demonstrate that when students and teachers develop affectionate relationships among themselves there is less likelihood for bullying behaviors.

Limitations

Within the limitations of this study, is worth highlighting the instruments used to evaluate the selected constructs. The bullying phenomenon was captured through the Bullying Scale of Olweus, from which is possible to point out some fragilities. Academic achievement is not assessed through objective measures of the students' performance (for example, final term scores), instead, is the result of a classifying appreciation made by a certain teacher at a certain moment. The Conners scale englobes 28 items (in the teacher's version) and 4 subscales that evaluate oppositional problems, inattention/cognitive problems, excessive motor activity and finally, the ADHD index. This scale is one of the most used instruments to evaluate behavioral changes in 7-year-old children (Conners, 1997), but it is a very Attention Deficit Hyperactivity Disorder ADHD oriented instrument. Despite this last fact, it was the chosen instrument, since it seemed the simplest to ask of the teacher to fill out.

In this study, the variables were measured in a single moment, which is a methodological limitation, we propose that future studies reproduce with other

samples the analysis of the model presented using longitudinal drawings, measuring in two or three different moments.

This study does not focus directly on the Attention Deficit Hyperactivity Disorder (ADHD), we address this disorder simply because we are interested in verifying whether at the level of classroom behavior there are behaviors that compose it. However, we do not work with sufficient instruments to identify this disorder in the sample studied.

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