

## **Maternal Awareness of Adolescent Bullying Victimization in a Low-Income Context**

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## **Abstract**

**Background:** Adolescents and parents often disagree about the perception of bullying victimization since adults tend to underestimate its occurrence.

**Objective:** This study identifies factors that can influence maternal perception of bullying victimization experienced by her son/daughter in the past 12 months.

**Methods:** This cross-sectional study involved a representative sample of in-school adolescents (n = 669, 11-15-years) living in Itaboraí city, Brazil (mean age  $\pm$  SE: 13.01  $\pm$  0.07 years; 51.7% females). A 3-stage probabilistic sampling procedure (random selection of census units, eligible households and target child) generated sampling weights. Trained lay interviewers individually applied semi-structured questionnaires to mothers and adolescents in the households. Multivariable logistic regression analysis examined factors potentially influencing maternal perception of bullying victimization experienced by her son/daughter: adolescent gender and age, adolescent self-perceived bullying victimization, exposure to severe physical punishment by parents, internalizing/externalizing behaviour problems identified by the Youth Self-Report/YSR, maternal education and maternal anxiety/depression identified by the 20-item Self-Reporting Questionnaire/SRQ-20.

**Results:** Univariable logistic regression analysis identified a strong association between adolescent self-perceived bullying victimization and maternal perception of bullying victimization experienced by her son/daughter. Multivariable models showed that adolescent perception influenced maternal perception when adolescents had no clinical internalizing behaviour problems and when mothers had higher education.

**Conclusion:** Anxious/depressive adolescents may hide victimization incidents, while those with no problems probably reveal these incidents to the mother. Considering that maternal low education is an indicator of low socioeconomic status, which is associated with multiple

stressors, less educated mothers may be more likely to interpret these incidents as a common part of growing-up.

**Keywords:** bullying, adolescent, mothers, mental health, educational status, awareness.

## 1. INTRODUCTION

The basic definition of bullying victimization includes exposure to intentionally negative or aggressive acts from peers that are carried out repeatedly and over time. In bullying, there is also a certain imbalance of power or strength since victims have difficulty defending themselves (Olweus, 2013). However, the way parents define and conceptualize bullying can influence whether and how they respond or intervene. For instance, some parents consider bullying only as physical forms of peer harassment, and others think that incidents are a normal and inevitable part of childhood. When parents are aware of their child's victimization experiences and recognize its potentially harmful consequences, they may respond by suggesting effective or ineffective strategies to their child to help stop bullying (e.g. telling an adult, learning pro-social behaviour, retaliating, ignoring the child who bullies), and may decide to communicate with the school in order to protect the child (Sawyer, Mishna, Pepler, & Wiener, 2011). Parental support, family cohesion and family involvement in children's school life are associated with lower levels of bullying victimization. In addition, support by parents for victimized children reduces the stress level and is correlated with a lower probability of future re-victimization (Nocentini, Fiorentini, Di Paola, & Menesini, 2018).

Bullying at school constitutes a major risk factor for poor physical and mental health (Menesini, Salmivalli, 2017; Moore, Norman, Suetani, Thomas, Sly, & Scott, 2017) and reduced adaptation to adult roles including forming lasting relationships, integrating into work

and being economically independent (Wolke & Lereya, 2015). Victims of school bullying are at risk for negative short and long-term consequences such as depression, anxiety, self-harm, suicide, and delinquency (Zwierzynska, Wolke, & Lereya, 2013; Lereya, Copeland, Costello, & Wolke, 2015; Sourander, Gyllenberg, Klomek, Sillanmäki, Ilola, & Kumpulainen, 2016; Thomas, Connor, Lawrence, Hafekost, Zubrick, & Scott, 2017; Vergara, Stewart, Cosby, Lincoln, & Auerbach, 2019). Victims of bullying are also at risk for low academic achievement (Rønning, Thorvaldsen, & Egeberg, 2017). According to Espinoza, Gonzales, & Fuligni (2013), distress accounts for the association between peer victimization and academic problems.

Research on bullying started more than 40 years ago and has greatly increased over the past 15 years (Olweus, 2013). Considering the whole history of research in the field, most of the highly cited articles on bullying come from Northern Europe and Northern America, and publications from low- and middle-income countries are scarce (Zych, Ortega-Ruiz, & Del Rey, 2015a). Studies have also been conducted in Australia, New Zealand and Spain (Avilés, Irurtia, García-Lopez, & Caballo, 2011). Zych, Ortega-Ruiz, & Del Rey (2015b) conducted a systematic review of systematic reviews and meta-analyses on bullying and cyberbullying, examining prevalence, the relationship between bullying and cyberbullying, minorities' involvement in bullying, risk and protective factors, consequences of bullying and cyberbullying, effectiveness of anti-bullying programs, effectiveness of different program components and evaluation strategies and methodologies. Regarding victimization, the authors found that the more effective anti-bullying programs involved parent training and meetings, since parents lack information on bullying and have difficulty in recognizing the phenomenon. Pigozi & Machado (2015) analysed the academic literature on bullying among adolescents in Brazil, focusing on gender differences, associated factors, the consequences for mental health, and possible intervention and prevention approaches. The authors found a lack

of awareness and understanding among adolescents about bullying and its consequences, and a lack of strategies to manage this type of aggression.

There is a lack of studies in the literature regarding parental perspectives on bullying, with the limited research on the adults involved in the child's life mainly being focused on teachers' perspectives (Sawyer *et al.*, 2011). A literature review on school bullying that examined research conducted in Brazil and published before 2013 did not identify any study involving parents (Borsa, Petrucci, & Koller, 2015). In Spain, an interesting study (Larrañaga, Yubero, & Navarro, 2018) explored the relationship between parents' awareness of bullying, adolescents' self-reported victimization, and six possible parental responses to their child's victimization. The participants were 1044 seventh to tenth grade students and their parents. Being a victim of bullying was defined as having suffered one or more of the 14 behaviors investigated (including traditional bullying and cyberbullying items) at least once a week during the last month. Parents' awareness of bullying involvement was identified by a yes response to a single question: "Have you ever suspected or found out that your child might be bullied by other children?" The authors noted that parents reported higher bullying victimization rates than did their children (22.3% vs. 6.2%), and that there was a low degree of concordance between the children's and the parents' reports of bullying. Furthermore, when considering the response of parents to the bullying of their child, it was observed that those who believed their child had been bullied were less likely to encourage their children to talk with the bully, and when children reported victimization, it was less likely that their parents would encourage them to defend themselves or talk with the bully.

Identifying an incident as bullying can be complex and confusing for children, parents and teachers (Mishna, 2004). Students, parents and teachers often disagree about the perception of bullying victimization since adults tend to underestimate the occurrence of the problem (Demaray, Malecki, Secord, & Lyell, 2013). Sometimes a child considers a situation as

bullying whereas the adult concludes that it was not bullying since he/she may characterize the incident as a normal part of development (Mishna, Pepler, & Wiener, 2006). A study conducted in Finland among eight-year-old males ( $n = 2713$ ) examined cross-informant agreement about bullying victimization and found that the agreement between the children, parents and teachers was poor (Rønning *et al.*, 2009).

According to Matsunaga (2009), it is important that future research evaluates populations from different ethical-cultural and socioeconomic backgrounds and does not limit investigation to bully-victim dyads but also examines child-parent perceptual discrepancies on bullying. The current study contributes to the existing literature on maternal perception of bullying victimization experienced by their children by examining factors that may influence maternal perception of bullying victimization among adolescents residing in a low-income Brazilian city. The current study aims to identify adolescent and maternal factors that can modify the strength of the association between self-perceived bullying victimization and maternal perception of bullying victimization. To the best of our knowledge, no other published study has had the same objectives.

## **2. METHODS**

### **2.1. Study Design and Sampling**

This is a cross-sectional study nested in a longitudinal study entitled “Itaboraí Youth Study” that was conducted in Itaboraí, a low-income city from southeast Brazil (218,008 inhabitants, 98% urban) (IBGE, 2010) by the Universidade Federal de São Paulo (Brazil) in collaboration with the University of Tromsø (Norway). At baseline, a probabilistic community-based sample of 1409 6-to-15-year olds (response rate = 87.8%) was selected

based on a three-stage sampling procedure that involved first a random sample of census units (107/420) using the method “probability proportional to the size”, second a random sample of eligible households (15 in each selected census unit) and third, a target child randomly selected among all eligible children in each participant household. The eligibility criteria included boys and girls aged 6-15 years residing with his/her biological, step or adoptive mother. Exclusion criteria were intellectual disabilities (child not able to play with other children or go to a regular school or regular classroom) and mother younger than 18 years. More detailed information on the Itaboraí Youth Study methods can be found elsewhere (Bordin *et al.*, 2018).

## **2.2. Procedures and Measures**

In the period of February-December 2014, trained lay interviewers applied semi-structured questionnaires to the mothers of all the children/adolescents ( $n = 1409$ ). In this sample, 720 were adolescents (aged 11-15 years), and 94.4% of them were individually interviewed ( $n = 680$ ). All study data were derived from interviews conducted in privacy in the participants’ homes. This paper focuses on the sub-sample of adolescents that had been attending school in the previous six months ( $n = 669$ ). Self-reported bullying victimization information was restricted to this age group.

Maternal perception of bullying victimization experienced by her son/daughter in the past 12 months was the current study’s outcome of interest. In the mothers’ questionnaire, the following question developed by the authors was asked: “Was the <target child> threatened, maltreated or chased by peers at school in the past 12 months?” Answers were coded as (0) “no” or (1) “yes”. When applying the adolescent questionnaire, the interviewer first informed him/her about the definition of bullying (“when one or more school peers are repeatedly doing

bad things to you such as name-calling, threatening, hitting, spreading rumours about you, excluding you from the group or teasing you to hurt your feelings”). Then, they were asked one question about self-perceived bullying victimization: “How often have you been bullied in the past six months?” Answers were coded as (0) “not at all”, (1) “less than once a week”, (2) “more than once a week” or (3) “most days”. The frequency of more than once a week/most days identified repeated exposure, and not at all/less than once a week was considered no exposure.

Factors potentially influencing the association between self-perceived bullying victimization and maternal perception of bullying victimization included variables reported by adolescents (gender, age, internalizing behaviour problems, externalizing behaviour problems, severe physical punishment by parents) and variables reported by mothers (maternal education, maternal anxiety/depression).

The Youth Self-Report (YSR/11-18) is a screening instrument that identifies emotional and behaviour problems among adolescents. Interviewers applied the Brazilian version of the YSR to adolescents to identify clinical internalizing and externalizing problems in the previous six months. YSR scale T-scores were classified in the clinical, borderline/normal range according to pre-established cut-off points (Bordin *et al.*, 2013).

Eight items from the Brazilian version of the World Studies of Abuse in the Family Environment (WorldSAFE) Core Questionnaire investigated adolescent-reported severe physical punishment by one or both parents in the previous 12 months: being hit with an object such as a stick, broom, cane or belt; kicked; choked; smothered; burned/scalded/branded; beaten (hit over and over again with an object or fist); threatened with a knife/gun; or harmed with a knife/gun. Answers for the eight items were coded as (0) “no” or (1) “yes”. Being a victim of severe physical punishment by one or both parents was



determined by the presence of at least one positive item (Bordin, Duarte, Peres, Nascimento, Curto, & Paula, 2009; Runyan *et al.*, 2010).

The World Health Organization 20-item Self-Reporting Questionnaire (SRQ-20) (WHO, 1994) is the screening instrument used to identify maternal anxiety/depression. Answers for SRQ-20 items were coded as (0) “no” or (1) “yes”. The sum of all items resulted in a total score ranging from 0 to 20. In Brazil, a total score greater than seven identifies positive cases (de Jesus Mari & Williams, 1968).

### **2.3. Statistical Analysis**

In this paper, absolute numbers of subjects are unweighted (refer to the sample), while means and percentages are weighted (refer to the city population). Univariable logistic regression analysis examined each one of the seven independent variables potentially associated with maternal perception of bullying victimization to obtain crude odds ratios. These variables comprised five adolescent characteristics (gender, age, internalizing behaviour problems, externalizing behaviour problems, severe physical punishment by parents) and two maternal characteristics (education, and anxiety/depression). Multivariable logistic regression analysis examined six-possible two-way interactions between adolescent self-perceived bullying victimization and each one of the other six independent variables to estimate the adjusted odds ratios in the presence of all seven independent variables. Regarding collinearity among the independent variables, no pairwise phi correlations were higher than 0.22 except for the correlation between internalizing and externalizing behaviour problems ( $\phi = 0.44$ ). SPSS 20 was used for all analyses.

## **3. RESULTS**

The current study involved a representative sample of in-school adolescents ( $n=669$ , 11-15-years) living in Itaboraí city (mean age  $\pm$  SE:  $13.01 \pm 0.07$  years; 51.7% females). When interviewed, 5.5% (3.7-8.0%) of the in-school adolescents reported being victims of bullying more than once a week/most days in the past six months. When interviewed, 9.0% (6.1-13.1%) of mothers were of the opinion that their son/daughter had been bullied in the past 12 months. In the group of adolescents that reported being bullied, 25.7% of their mothers were of the opinion that their son/daughter had been bullied in the past 12 months. In addition, 11.2% (8.0-15.3%) of the adolescents had internalizing behaviour problems in the clinical range, 8.3% (6.0-11.4%) had externalizing behaviour problems in the clinical range, and 12.4% (9.2-16.4%) had suffered severe physical punishment by one or both parents in the past 12 months. Regarding mothers, 51.8% (45.6-58.0%) had less than eight years of schooling and 25.0% (21.1-29.3%) had anxiety/depression.

Univariable logistic regression analysis identified a strong association between adolescent self-perceived bullying victimization and maternal perception of bullying victimization of her son/daughter (OR: 10.70, 95% CI: 5.20-22.03,  $p < 0.001$ ) (Table 1). When using multivariable logistic regression to examine the existence of two-way interactions between self-perceived bullying victimization and each one of the other six independent variables, an interaction between self-perceived bullying victimization and internalizing behaviour problems was detected ( $p = 0.008$ ) (Table 2 - Model 1). This interaction means that the association between self-perceived bullying victimization and maternal perception of bullying victimization exists only for borderline/normal adolescents (Figure 1). Among borderline/normal adolescents, those suffering bullying were 18 times more likely to have a mother that perceives their victimization condition compared to those not suffering bullying (OR: 18.35, 95% CI: 7.19-46.86,  $p < 0.001$ ). When adolescents had clinical internalizing

problems, self-perceived bullying victimization did not influence maternal perception (OR: 1.26, 95% CI: 0.29-5.49,  $p = 0.76$ ). In addition, an interaction between self-perceived bullying victimization and maternal education was also identified ( $p = 0.004$ ) (Table 2 - Model 2).

When mothers had eight or more years of schooling, adolescent self-perceived bullying victimization favoured maternal perception (OR: 24.92, 95% CI: 8.35-74.42,  $p < 0.001$ ), but when mothers had less than eight years of schooling self-perceived bullying victimization did not influence maternal perception (OR: 1.82, 95% CI: 0.46-7.13,  $p = 0.39$ ) (Figure 2).

#### **4. DISCUSSION**

Using univariable logistic regression analysis, the current study found a strong association between adolescent self-perceived bullying victimization and maternal perception of bullying victimization of her son/daughter. This initial finding suggests that adolescents who perceive themselves to be victims of bullying probably tell their mothers about their victimization experiences, and that is why self-awareness influences maternal awareness. However, not all adolescents tell their parents about their victimization experiences. Besides child disclosure, active parental control and surveillance (when parents ask their children or their children's friends for information) are also sources of parental knowledge about bullying victimization (Stavrinides, Nikiforou, & Georgiou, 2015). A longitudinal study involving 348 young adolescents (attending seventh and eighth grades from eight public high schools in Cyprus) found that victimization at Time 1 predicted a lack of disclosure six months later (Time 2), which supports the assumption that victimized children often hide their experience from their parents. Victimization at Time 1 also predicted parental active monitoring at Time 2, which is expected since parents want to know if victimization continues and do not rely on their

children to reveal the incidents. Also, victimization at Time 2 was not associated with any of the sources of parental knowledge at Time 1, indicating that parents' efforts to know about their children's socialization at school may not lead to reduced bullying victimization (Stavrinides, Nikiforou, & Georgiou, 2015).

The Swedish Health Behavior in School-Aged Children survey conducted from 2013-2014 ( $n = 7867$ ; ages: 11, 13, 15) showed that bullied students had poorer relationships with their parents compared to non-victims (Bjereld, Daneback, & Petzold, 2017). Victims were more likely to report difficulties in talking to parents about things bothering them and to think that their family was not listening to them. Therefore, it is reasonable to suppose that certain characteristics of children and families could result in the establishment of barriers in relation to the disclosure of bullying victimization incidents. These could include anxiety and depression symptoms in the children and negative parent-child relationships such as those observed in the presence of child maltreatment.

When applying multivariable analysis, our study showed that the strength of the association between adolescent self-perceived bullying victimization and maternal perception of bullying victimization was modified by the presence or absence of adolescent clinical internalizing behaviour problems. When adolescents had clinical internalizing problems, self-perceived bullying victimization did not favour maternal perception, which raises the hypothesis that anxious/depressive adolescents tend to avoid telling their mother that they are suffering bullying at school. On the other hand, when adolescents had no internalizing problems or problems at a borderline level, self-perceived bullying victimization influenced maternal perception, and this can be interpreted as a tendency of borderline/normal adolescents being more open with their mothers about being bullied compared to clinical adolescents. Therefore, it is reasonable to hypothesize that adolescents without clinical internalizing problems communicate better with their mothers and more often tell her about

their bullying victimization experiences. Ledwell and King (2015) analysed cross-sectional data from a United States nationally representative sample of children in grades 6 through 10 during the 2001/2002 school year ( $n = 14,817$ ). The authors found that communication between adolescents and parents moderates the association between bullying and internalizing problems, with higher levels of parental communication buffering adolescents against the negative influence of bullying in the same way for males and females. Bullied children, especially frequent victims, have higher odds of having poor relations with their parents than non-victims, and may withhold disclosure of victimization due to distrust of adults (Bjereld, 2017).

When applying multivariable analysis, our study also showed that the strength of the association between adolescent self-perceived bullying victimization and maternal perception of bullying victimization could be modified according to the level of maternal education. Adolescent self-perceived bullying victimization influenced maternal perception when mothers had eight or more years of schooling, but when mothers had less than eight years of schooling, self-perceived bullying victimization did not favour maternal perception. These findings suggest that a higher level of education makes the mothers more likely to give weight to what their children tell them about being bullied and consider it an abnormal and painful experience that deserves family support. In addition, mothers with lower levels of education may hear from their children that bullying victimization is occurring, but they may not attach as much importance to this in relation to children's rights, school staff responsibilities and the possible deleterious long-term consequences for the adolescents' mental health and social relations as more educated mothers do. Because a low level of maternal education can be an indicator of a family's low socioeconomic status (Von Rueden, Gosch, Rajmil, Bisegger, & Ravens-Sieberer, 2006), and poverty usually involves multiple stressors (Oliveira, Silva, Sampaio, & Silva, 2017), low-educated mothers may recognize peer harassment as a stressor

but may be more likely to interpret it as a natural and common part of growing-up. Furthermore, higher maternal stress has been found among the mothers of bullied children compared to the mothers of children who are not bullied (Alizadeh Maralani, Mirnasab, & Hashemi, 2016), and stressed parents may fail to be sensitive and responsive to their child's distress. Finally, children of low-educated parents have an increased risk of becoming victimized by bullying (Von Rueden *et al.*, 2006; Malta *et al.*, 2014; Lister, Merrill, Vance, West, Hall, & Crookston, 2015; Mello, Malta, Prado, Farias, Alencastro, & Silva, 2016; Oliveira *et al.*, 2017). Because low education is an indicator of low socioeconomic status and victims of bullying are more likely to come from low socioeconomic households, one may conclude that there is a direct relationship between peer victimization and low socioeconomic status. However, it might be that factors associated with low socioeconomic status, such as more adverse home environments including corporal punishment from mothers (de Paula Gebara, Ferri, de Castro Bona, de Toledo Vieira, Lourenço, & Noto, 2017) or witnessing domestic violence (partner violence) are the real predictors of bullying victimization (Tippett & Wolke, 2014).

#### **4.1. Strengths and Limitations**

The strengths of the study include the relevance of conducting methodologically sound research on maternal perception of school bullying victimization, an important topic that is rarely investigated in many countries, especially in low-and middle-income countries like Brazil, particularly among adolescents from a poor socioeconomic background. The cross-sectional design of the study is appropriate to meet the present aims (moderation effects of independent variables). Study limitations should also be recognized such as the number of adolescents in the study sample. Because some independent variables have low predictive power due to skew distributions, this could have been helped by a larger sample size.

However, this is a typical problem in observational studies, where the predictive power is at the mercy of how the variables are distributed.

## **CONCLUSION**

In conclusion, there is a need to increase parental awareness about the occurrence and potential harmfulness of school bullying victimization, especially among low-educated mothers. It is also important that interventions to minimize bullying at school include an effort to build healthy mother-child interactions and better communication, especially among families of anxious/depressive adolescents. Parents should be included in school-based bullying prevention programs (Holt, Kaufman Kantor, & Finkelhor, 2008) since collaboration between parents and schools is desirable in order to deal effectively with bully/victim problems (Rigby, 2013).

Future perspectives for research in the field include the analysis of longitudinal data in order to identify risk factors that maintain bullying victimization over time, and protective factors that may reduce or eliminate victimization among adolescents as they grow older. These factors may be individual and/or familial characteristics including adolescent exposure to violence at home and in the community, maladaptive parenting, the quality of parent-child communication, parental knowledge about bullying, parental involvement and support and parental attitudes toward victimization.

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## **LIST OF ABBREVIATIONS**

CI = Confidence interval

FAPESP = São Paulo Research Foundation (Fundação de Amparo à Pesquisa do Estado de São Paulo)



IBOPE = Brazilian Institute of Public Opinion and Statistics (Instituto Brasileiro de Opinião e Estatística)

OR = Odds ratio

SRQ-20 = The 20-item Self-Reporting Questionnaire developed by the World Health Organization

WorldSAFE = The World Studies of Abuse in the Family Environment

YSR/11-18 = The Youth Self-Report

## **ETHICS APPROVAL AND CONSENT TO PARTICIPATE**

The National Research Ethics Commission of the Brazilian National Health Council (process number 25000.182992/2011-76) and the Research Ethics Committee of the Universidade Federal de São Paulo (process number 0324/11) approved the study. Written informed consent was obtained from all participant mothers and written informed assent from all participant adolescents. No participants can be individually identified in the database. The study is in accordance with the principles embodied in the Declaration of Helsinki.

## **HUMAN AND ANIMAL RIGHTS**

Humans were the subjects of this study. Adolescents and their mothers were interviewed to collect data on the study variables of interest.

## **CONSENT FOR PUBLICATION**

Not applicable.

## **AVAILABILITY OF DATA AND MATERIALS**

Our study has associated data in a data repository in Norway (Norwegian Centre for Research Data - <https://nsd.no/nsd/english/index.html>). The data supporting the findings of the article is not currently available to the public since the study data is currently restricted to the research team responsible for the study, invited research collaborators and respective post-graduate students.

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## **CONFLICT OF INTEREST**

The authors declare no conflict of interest, financial or otherwise.

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**Table 1. Univariable Logistic Regression Analysis Examining Factors that May Favour Maternal Perception of Bullying Victimization in Their Children (N = 669).**

Independent variables	Crude OR (95% CI)	P value
ADOLESCENT REPORTED		
Self-perceived bullying victimization in the past six months <sup>a</sup>	10.70 (5.20-22.03)	<0.001
Gender (male vs. female)	0.90 (0.53-1.55)	0.711
Age (years)	0.85 (0.69-1.03)	0.103
Internalizing problems (clinical vs. border/normal)	3.83 (1.99-7.37)	<0.001
Externalizing problems (clinical vs. border/normal)	2.37 (1.09-5.13)	0.029
Severe physical punishment by parents in the past 12 months <sup>b</sup>	1.30 (0.59-2.86)	0.515
MOTHER REPORTED		
Maternal education (< 8 years vs. 8 or more years)	0.79 (0.46-1.36)	0.389
Maternal anxiety/depression (SRQ-20 total score >7 vs. 0-7)	1.67 (0.94-2.98)	0.083

OR = odds ratio; CI = confidence interval.

<sup>a</sup> More than once a week/most days vs. less than once a week/not at all; <sup>b</sup> Yes vs. no.

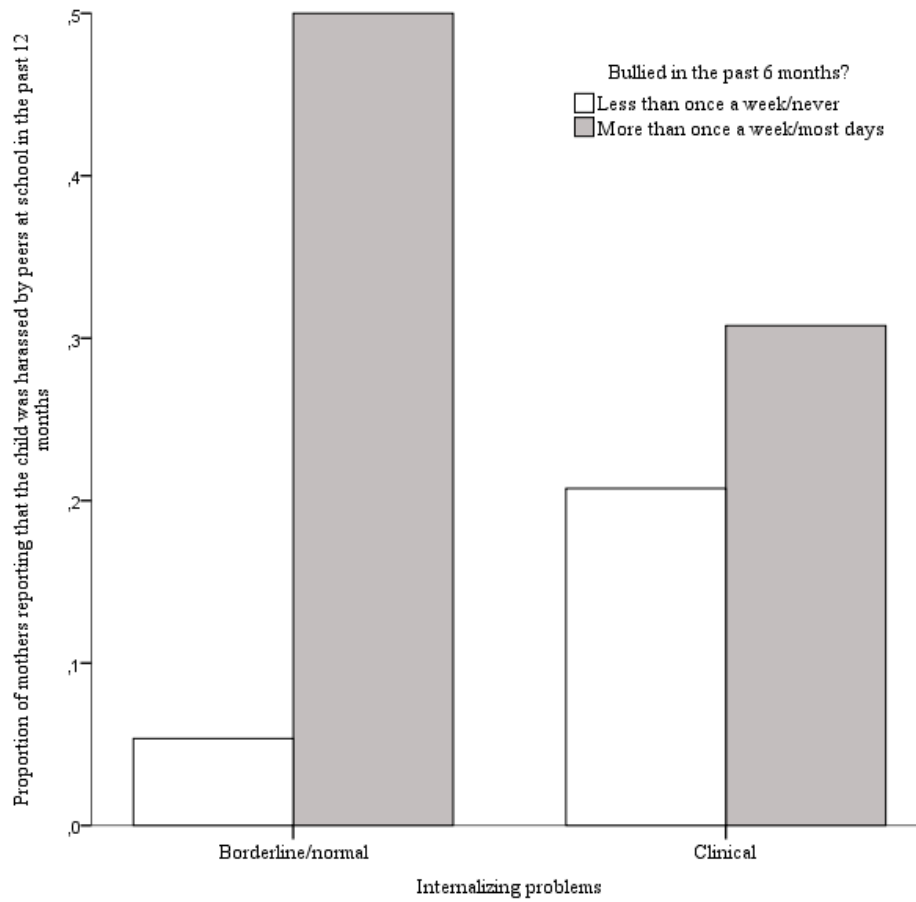
**Table 2. Multivariable Logistic Regression Models Showing Significant Two-Way Interactions Associated to Maternal Perception of Bullying Victimization in Their Children (N = 669).**

Independent variables	Model 1 Adjusted OR (95% CI)	Model 2 Adjusted OR (95% CI)
<b>ADOLESCENT REPORTED</b>		
Self-perceived bullying victimization in the past six months <sup>a</sup>	16.50 (6.68-40.72)	23.65 (8.22-67.99)
Gender (male vs. female)	0.87 (0.49-1.56)	0.83 (0.46-1.49)
Age (years)	0.90 (0.72-1.11)	0.89 (0.72-1.10)
Internalizing problems (clinical vs. border/normal)	4.07 (1.72-9.62)	3.02 (1.30-7.04)
Externalizing problems (clinical vs. border/normal)	1.46 (0.56-3.82)	1.44 (0.54-3.84)
Severe physical punishment by parents in the past 12 months <sup>b</sup>	0.75 (0.31-1.83)	0.83 (0.33-2.04)
<b>MOTHER REPORTED</b>		
Maternal education (< 8 years vs. 8 or more years)	0.71 (0.39-1.30)	0.95 (0.50-1.81)
Maternal anxiety/depression (SRQ-20 total score >7 vs. 0-7)	1.37 (0.72-2.61)	1.52 (0.80-2.88)
<b>TWO-WAY INTERACTIONS</b>		
Self-perceived bullying victimization * Internalizing problems	0.11 (0.02-0.57)*	Not included
Self-perceived bullying victimization * Maternal education	Not included	0.08 (0.02-0.44)**

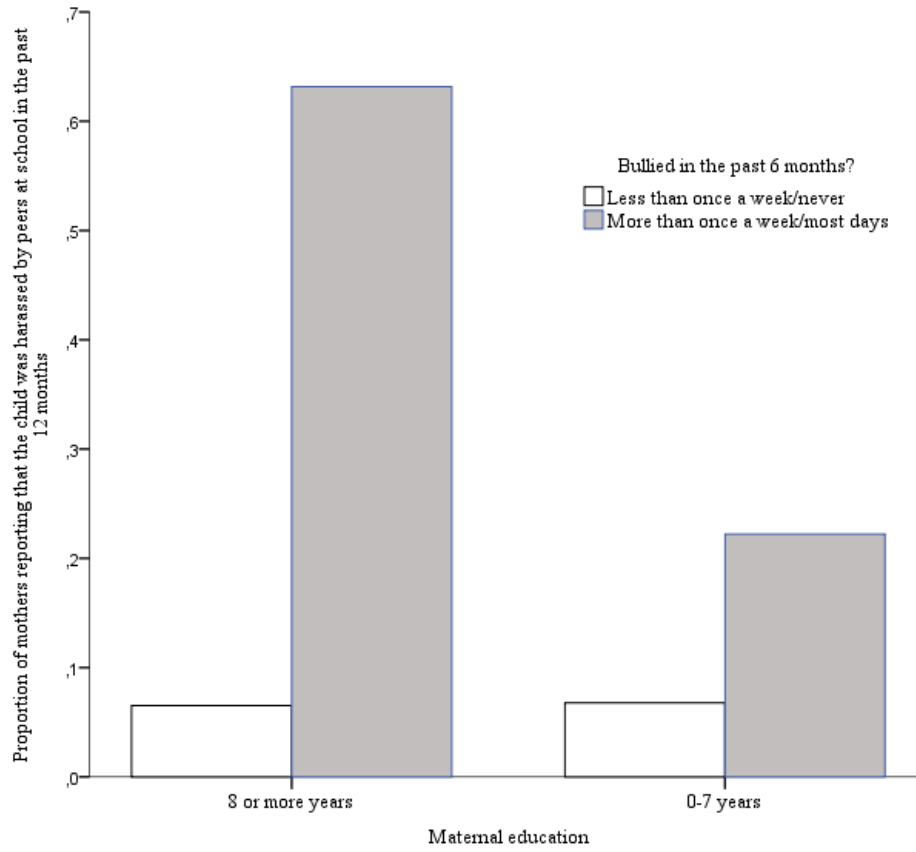
OR = odds ratio; CI = confidence interval.

<sup>a</sup> More than once a week/most days vs. less than once a week/not at all; <sup>b</sup> Yes vs. no.

\* p = 0.008; \*\* p = 0.004.



**Figure 1.** Interaction between self-perceived bullying victimization and internalizing behavior problems



**Figure 2.** Interaction between self-perceived bullying victimization and maternal education