

FAMILY, SCHOOL AND COMMUNITY VIOLENCE AND PROBLEM BEHAVIOR IN CHILDHOOD: RESULTS FROM A LONGITUDINAL STUDY IN BRAZIL

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Objective - To analyze if the presence of internalizing and externalizing behavior over the years are associated to the occurrence of family and social violence among schoolchildren in a Brazilian municipality. **Subjects** - A sample of 295 children from public schools was followed longitudinally in three waves (2005-2008), assessing the emotional and behavioral problems (CBCL) and the presence of different forms of violence. **Methods** - Two linear regression models were conducted taking into account the longitudinal dependence. **Results** - The final model for externalizing problems identified that boys are more affected and that physical violence between grandparents, between parents and between siblings, parental verbal aggression against the child and school violence are related to an increase in symptomatology throughout the period studied. The model of internalizing behavior encountered the following variables as being significant: verbal aggression of parents towards the child, sibling physical aggression and violence at school. **Conclusion** - The results indicate the need for preventive proposals focusing on the family and violence at school, thereby reducing emotional and behavioral problems that seriously affect child development.

Key words: Child ■ Internalizing Behavior ■ Externalizing Behavior ■ Violence

Introduction

Children and adolescents worldwide suffer from violent situations in various contexts, with their basic rights often being violated, such as access to education, health care and the attention necessary for their healthy development. Children and adolescents suffer from physical and emoti-

onal abuse, situations of abandonment and witnessing different forms of violence. Being subjected to violent lifestyles, their health may be physically and mentally prejudiced (1). Among mental health problems the most common are mainly within the self (internalizing), for example anxiety and depression, and those problems that mainly involve conflicts with other people (externalizing), as conduct problems. Children and adolescents, during this fast growth and development phase, are highly vulnerable to situations of violence occurring in the family, and in the social environment in which they live, and depend on the protection of adults, institutions and existing public policies.

Studies of population samples regarding violence against children and adolescents vary widely around the world (1). In the United States, it is estimated that family violence affects 10 million American households per year (2). In the statistics on school and community violence, the scenario is also alarming. Bell and Jenkins found that among adolescents from 10 to 19 years of age in the city of Chicago (USA), 75% have witnessed robbery, stabbing, shooting or death (3). In Cape Town - South Africa, children are exposed to a significant amount of community violence in the form of school violence, neighborhood violence, gang violence, and police violence. Almost all of the 185 children interviewed (91.3%) had seen someone hit at school and 83% had seen someone kicked or shoved. The majority had seen someone hit (92.9%) someone in their neighborhoods, kicked (82.5%), pushed or shoved (76.5%) or in a fight (77%). They also witnessed more serious forms of violence such as seeing someone badly beaten up (73.2%), threatened with a knife or sharp object (60.7%), attacked with a sharp weapon (56.8%), threatened with a gun (45.4%), and shot at (57.4%). Over a third of the children (35.5%) reported seeing someone killed.

Gang and police violence were somewhat less extensive, although still significant (4). In Brazil, Bordin and Paula indicate that 20% of Brazilians living in a poor urban area had been exposed in the previous 12 months to domestic violence in the form of serious punishment by one of the parents. The same study reports that 18.8% of children and adolescents have witnessed marital conflict at some stage in their lives (5).

Studies show that violence is associated with poor physical and mental health, reproductive health problems, somatic complaints and serious medical conditions such as cancer and ischemic heart disease, either as a trigger or as a risk factor (6, 7). Among children and adolescents, associations between problem behavior and family environment variables have been consistently verified. The quantity or quality of negative life events arising from the family has been identified as particularly harmful to child development, being a predisposing factor to behavioral problems (8, 9, 10). Leve, Kim and Pears stress that, irrespective of the specific common mechanisms involved, aggressive parental behaviors could be used as markers for screening children at greater risk for internalizing and externalizing problems developing in childhood (11).

Research has also pointed to the relevance of violence in the community and school environment as risk factors for emotional and behavioral problems in children. A study conducted in a poor and violent neighborhood in Washington, United States, indicates that exposure to the phenomenon of violence (being victimized or a witness) is associated with mental distress, such as anxiety, depression, sleep disturbances, lack of concentration at school, hypervigilance and intrusive thoughts (4, 12, 13).

Malik finds a significant association of family and community violence with problems of internalizing and externalizing behavior, pointing to a possible threat to the

child's sense of security and prejudicing their growth and development (14).

Brazilian studies linking violence with mental health problems are still rare and usually are cross-sectional studies. Fleitlich and Goodman (15), found more psychiatric disorders among children and adolescents who have witnessed violence between their parents and who are raised with harsh discipline, that includes acts such as hitting with belts. Benvegna et al. (16) found that children and adolescents with mothers who cry excessively, and beat or punish severely among other inappropriate reactions, have twice the chance of having mental health problems than those not exposed to these practices. Vitolo et al. (17) interviewed parents of students from public and private schools, and found that beating children with belts alone was associated with conduct disorder and mental health. Paula et al. (18) also researching Brazilian children, find a higher probability of mental health problems among those who had experienced domestic and/or community violence.

Although there has been an increasing number of studies of psychiatric epidemiology in childhood and adolescence in recent years, there are still few in relation to different social contexts, especially with regard to developing countries. Other aspects that still deserve further study by researchers are the different diagnostic classifications and methodologies of measurement, as well as the social and cultural differences existing in different regions and countries (19, 20). All these aspects help to explain the variation in the estimated prevalence of psychiatric disorders in juvenile populations in several countries - 1-51% (10).

Due to the limits of knowledge that still exist today, this paper presents a longitudinal investigation of the presence of internalizing and externalizing behavioral problems, associated to the occurrence of family and social

violence among schoolchildren in the city of Rio de Janeiro - São Gonçalo/Brazil. It aims to develop original knowledge on the subject, especially by the aggregation of temporality in the analysis, an aspect less verified in the Brazilian and also international literature.

Methods

Participants

The data are based on longitudinal design, which started in 2005, including 500 schoolchildren (mean age 7.8 years, Standard deviation (SD)=1.0) in the city of São Gonçalo in the state of Rio de Janeiro, Brazil (21). São Gonçalo is a low-income city, located in the state of Rio de Janeiro, in the southeast of Brazil. It is the second-largest city in the state, with a population of approximately 1 million people.

This article consists of a longitudinal analysis of the three waves of the study (2005, 2006 and 2008). The sample was initially collected in 2005 among first grade students of the public elementary schools of the city. The multi-stage cluster sampling strategy involved a three-stage design, which included all 54 public schools, 236 first grade classes and 6,589 children. In the first stage, 25 schools were systematically selected with probability proportional to the size of the whole sample. In the other two-stages, two classes per school and ten students per class were selected by simple random sampling. Each child's caregiver was invited for an interview (mainly mothers).

In 2006 and 2008 the majority of students/parents were re-interviewed (472 and 447, respectively), showing low loss in longitudinal follow up. The analysis of these losses did not show substantial differences regarding socioeconomic data and violence (21). Also, 20 children who presented results on the Wechsler Intelligence Scale for Children-III compatible with intellectually defi-

cient IQ (≤ 69) and one in which the test was not performed, were excluded (22) from the analysis presented in this article. For the sake of the longitudinal analysis, data of 295 children who attended the three stages of the research and who had complete information on all variables were used. Many missing values were found amongst the 15 explanatory variables and 2 dependents included in the modeling. Even missing value implies exclusion from the analysis. Despite the reduction in the number of students included in the modeling, we found no statistically significant differences between the children investigated in this article and those excluded in relation to gender, social class, parental education and parental severe violence on children and a slight difference in mean age and severe physical violence between parents. Although, there are no statistical differences between the complete data and the missing data related to some variables (gender, social class, parental education and parental severe violence on children), we found some differences in mean age and severe physical violence between parents, and therefore, methods to impute missing data were not used because it had to be missing at random (23).

Procedures and measures

Paper questionnaires were applied to all the parents, with the following questions:

Sociodemographic variables: a) the sex of the child; b) age, employment status (employed/unemployed) and mother's education (illiterate/literate); c) age and father's employment (working/unemployed); and d) poverty line, which uses as a cutoff the monthly household income per capita of US\$2 per day as living above or below the poverty line (21).

Assessment of violence: a) physical violence between siblings – hitting to the point of hurting (absence/presence); b) physical violence between grandparents - hitting to

the point of hurting (absence/presence); c) severe physical violence perpetrated by the parents against the child and between the parents, as measured by the Conflict Tactics Scale - CTS, through the following actions: punching, kicking, hitting or trying to hit with objects, beating, threatening or actually using a firearm or knife (24). A positive response configures the presence of violence; d) verbal aggression of the parents against a child and between the parents, also evaluated by the CTS, through the following actions: abusing or insulting, sulking, crying, doing things to irritate, destroying, hitting or kicking objects; e) violence at school and in the neighborhood, investigated through the instrument used by the Latin American Institute the Prevention of Crime and the Treatment of Offenders of the United Nations - ILANUD/ONU, composed of eight items that assess whether the child has suffered violence in these social spaces through humiliation, threat, aggression, if something of his/hers has been damaged, if he/she has lived with people who carry knives or firearms, if he/she has already pickpocketed and/or robbed (25). At least one positive item in the school or community characterizes the presence of violence.

Assessment of internalizing and externalizing behavioral problems: Child Behavior Checklist, which assesses internalizing (32 items) and externalizing (35 items) behavioral problems in children from 6 to 18 years of age over the previous six months, based on information given by their parents. The internalizing behaviors aggregate anxiety (nervous, fearful), depression (sad, lacks energy) and somatic complaints (nightmares, headaches without known medical cause); between externalizing problems stand out aggressive behavior (attacks, threaten) and rule-breaking behavior (steals, run away). The response options ranged from not true to very true (0 to 2 points). The response

items were added up and standardized by the T-score ($T\text{-score} = 50 + 10 \times Z \text{ score}$), where Z is the standard normal score. The increase in T-score indicates the progression of the behaviors investigated (26). The CBCL was translated, adapted and validated in Portuguese by Bordin et al. (1995) (27).

The years in which the variables were collected are described in Table 1. The frequencies of qualitative variables and mean \pm SD of quantitative variables, for each of the survey years (2005, 2006 and 2008) were performed to describe the variables. Due to the temporal fluctuation of several variables during the course of the research, measured in 2005, 2006 and 2008, the construction was performed of a linear regression model that took into account this longitudinal dependence on the estimation of parameters.

Thus, a linear model was made for the t-score for each type of behavioral problem (internalizing and externalizing), using the method of generalized estimating equations (GEE) to determine the factors related to each of the outcomes. This class of models enabled the inclusion of temporal dependence of the observations through a marginal linear regression model, which included the correlation (of the order 1 autoregressive type) between observations repeated over time. All the sociodemographic and violence variables used in the exploratory analysis were used as explanatory variables in the regression models. The final regression model for each type of behavioral problem was selected by the Wald type III Analysis of Variance statistics, with a 5% level of significance. The values of the (beta) coefficient, 95% confidence interval (CI) and the p-value are shown in the Tables. Statistical analysis was performed on the Statistical Package for Social Sciences version 16.

The research project was authorized by the Human Research Ethics Committee of the Oswaldo Cruz Foundation, and written

informed consent was obtained from all the children's parents/legal guardians. Psychologist and Social Workers were available to support parents and children in need.

Results

On the basis of exploratory analysis, the temporal fluctuation of studied variables was examined (Table 1). Afterwards, a linear model was applied for each type of behavioral problem (externalizing and internalizing), using the method of generalized estimating equations (GEE) (Tables 2 and 3).

An exploratory analysis of the variables used in the models derived from the 295 schoolchildren monitored longitudinally is presented in Table 1. There are more male children; 4.1% of the mothers are illiterate; the average age of the children at the outset of the study was 7.8 years (SD=1.0) and at the end of study was 10.6 years (SD=0.92 years). There was a significant reduction in the number of people below the poverty line between 2005 and 2008 and an increase in the proportion of employed mothers and fathers. Violence between grandparents is in the order of 27% and severe forms of physical violence also showed a decrease in the previous 2 years investigated. Verbal aggression between parents and between parents and their children showed a decline between the first two years and an increase in the third. Violence in the school and the neighborhood were on the decline especially between 2005 and 2006.

Other relevant data regarding the sample of 295 schoolchildren investigated relate to the average age of the children at the outset of the study (7.8 years, SD=1.0) and the T-scores for internalizing and externalizing problems, found in a stable manner in the three years - approximately 49, included in the group of children without behavior problems, according to Achenbach (26).

Table 1 Evolution of sociodemographic variables and violence among the 295 schoolchildren (2005-2008)

Variables	Categories	2005	2006	2008
		n (%)	n (%)	n (%)
<i>Sociodemographic variables</i>				
Sex	Male	155 (52.5)	-	-
	Female	140 (47.5)	-	-
Mother's literacy	Illiterate	12 (4.1)	-	-
	Literate	283 (95.9)	-	-
Poverty line	Above	65 (24.4)	168 (68.6)	176 (81.5)
	Below	201 (75.6)	77 (31.4)	40 (18.5)
Employment ties of the mother	Employed	120 (45.1)	125 (51.0)	132 (61.1)
	Unemployed/Other	146 (54.9)	120 (49.0)	84 (38.9)
Employment ties of the father	Employed	207 (77.8)	212 (86.5)	203 (94.0)
	Unemployed/Other	59 (22.2)	33 (13.5)	13 (6.0)
Mother/responsible female's age	Mean ± SD	32.6±7.2	-	-
Father/responsible male's age	Mean ± SD	36.7±8.0	-	-
<i>Violence variables</i>				
Violence at school	Absence	152 (57.1)	174 (71.0%)	164 (75.9)
	Presence	114 (42.9)	71 (29.0%)	52 (24.1)
Violence in the neighborhood	Absence	199 (74.8)	199 (81.2)	179 (82.9)
	Presence	67 (25.2)	46 (18.8)	37 (17.1)
Physical violence between the grandparents	Presence	-	82 (27.8)	-
	Absence	-	213 (72.2)	-
Severe parental physical violence against the child	Absence	188 (70.7)	223 (91.0)	201 (93.1)
	Presence	78 (29.3)	22 (9.0)	15 (6.9)
Severe physical violence between the parents	Absence	95 (35.7)	139 (56.7)	131 (60.6)
	Presence	171 (64.3)	106 (43.3)	85 (39.4)
Parental verbal aggression against the child	Absence	37 (13.9)	50 (20.4)	42 (19.4)
	Presence	229 (86.1)	195 (79.6)	174 (80.6)
Verbal aggression between the parents	Absence	33 (12.4)	80 (32.7)	63 (29.2)
	Presence	233 (87.6)	165 (67.3)	153 (70.8)
Sibling violence	Absence	201 (75.6)	214 (87.3)	184 (85.2)
	Presence	65 (24.4)	31 (12.7)	32 (14.8)

SD=Standard deviation

The final model for externalizing problems identified as the most relevant variables (Table 2): gender (boys increase the T-score of externalizing problems by about 2.878 points relative to girls); violence between grandparents (when present it increases the T-score by 3.264 points); violence at school (when absent it reduces

the T-score by 1.026 points); severe physical violence of the parents against the child (when absent it reduces the T-score by 1.833 points); parental verbal aggression against the child (when absent it reduces the T-score by 2.975 points); and sibling violence (when absent it reduces the T-score by 3.891 points).

Table 2 Final longitudinal model for externalizing problems of 295 schoolchildren (2005-2008)

Variables	Categories	Beta	CI beta (95%)		p*
	Constant**	52.113	48.874	57.352	<0.001
<i>Sociodemographic variables</i>					
Sex	Male	2.878	1.204	4.553	0.001
	Female■	0.000	-	-	
Mother's literacy	Illiterate	0.254	-3.932	4.440	0.905
	Literate■	0.000	-	-	
Poverty line	Above	-0.118	-1.155	0.918	0.823
	Below■	0.000	-	-	
Employment ties of the mother	Employed	-0.569	-1.689	0.551	0.319
	Unemployed/Other■	0.000	-	-	
Employment ties of the father	Employed	-0.281	-2.042	1.481	0.755
	Unemployed/Other■	0.000	-	-	
Mother/responsible female's age	-	0.051	-0.077	0.180	0.435
Father/responsible male's age	-	0.014	-0.101	0.128	0.816
<i>Violence variables</i>					
Violence at school	Absence	-1.485	-2.653	-0.318	0.013
	Presence■	0.000	-	-	
Violence in the neighborhood	Absence	-1.026	-2.310	0.258	0.117
	Presence■	0.000	-	-	
Physical violence between the grandparents	Presence	3.264	1.403	5.125	0.001
	Absence■	0.000	-	-	
Severe parental physical violence against the child	Absence	-1.833	-2.917	-0.750	0.001
	Presence■	0.000	-	-	
Severe physical violence between the parents	Absence	-0.312	-2.041	1.416	0.723
	Presence■	0.000	-	-	
Parental verbal aggression against the child	Absence	-2.975	-4.290	-1.659	<0.001
	Presence■	0.000	-	-	
Verbal aggression between the parents	Absence	-1.119	-2.496	0.251	0.110
	Presence■	0.000	-	-	
Sibling violence	Absence	-3.891	-5.345	-2.346	<0.001
	Presence■	0.000	-	-	

*p-value of the coefficient in the Wald statistic;**Constant (or the intercept term) is the expected mean of Externalizing T-score in the regression model, if all categorical covariates were the reference values and all continuous covariates (Mother's and father's age) were zero; CI=Confidence Interval; ■ = Reference Category.

For internalizing problems the following remained in the final model, among all the variables shown in Table 1: violence at school, parental verbal aggression against the child and physical si-

bling violence. All these variables were explanatory factors in the variation of t-scores over the course of time (Table 3). The data of the model indicate that the absence of sibling violence reduces the

Table 3 Final longitudinal model for internalizing problems of 295 schoolchildren (2005-2008)

Variables	Categories	Beta	CI beta (95%)		p*
	Constant**	57.994	52.310	63.577	<0.001
<i>Sociodemographic variables</i>					
Sex	Male	-0.178	-1.978	1.621	0.846
	Female■	0.000	-	-	
Mother's literacy	Illiterate	-0.368	-3.836	3.100	0.835
	Literate■	0.000	-	-	
Poverty line	Above	-0.305	-1.477	0.867	0.610
	Below■	0.000	-	-	
Employment ties of the mother	Employed	-0.183	-1.429	1.063	0.774
	Unemployed/Other■	0.000	-	-	
Employment ties of the father	Employed	-0.425	-2.010	1.159	0.599
	Unemployed/Other■	0.000	-	-	
Mother/responsible female's age	-	0.054	-0.082	0.190	0.435
Father/responsible male's age	-	-0.073	-0.198	0.052	0.252
<i>Violence variables</i>					
Violence at school	Absence	-2.390	-3.762	-1.018	0.001
	Presence■	0.000	-	-	
Violence in the neighborhood	Absence	-1.235	-2.749	0.279	0.110
	Presence■	0.000	-	-	
Physical violence between the grandparents	Presence	1.788	-0.203	3.780	0.078
	Absence■	0.000	-	-	
Severe parental physical violence against the child	Absence	-0.774	-1.802	0.254	0.140
	Presence■	0.000	-	-	
Severe physical violence between the parents	Absence	-1.103	-2.865	0.658	0.220
	Presence■	0.000	-	-	
Parental verbal aggression against the child	Absence	-1.940	-3.236	-0.645	0.003
	Presence■	0.000	-	-	
Verbal aggression between the parents	Absence	-0.906	-2.363	0.552	0.223
	Presence■	0.000	-	-	
Sibling violence	Absence	-3.489	-5.314	-1.665	<0.001
	Presence■	0.000	-	-	

*p-value of the coefficient in the Wald statistic;**Constant (or the intercept term) is the expected mean of Internalizing T-score in the regression model, if all categorical covariates were the reference values and all continuous covariates (Mother's and father's age) were zero; CI=Confidence Interval; ■ = Reference Category.

T-score of internalizing problems by about 3.489 points. Also parental verbal aggression and violence at school show a similar relationship (-1.940 and -3.489, respectively).

Discussion

This study applied a longitudinal design to investigate the presence of internalizing and

externalizing behavioral problems, associated with the occurrence of family and social violence among schoolchildren in the city of Rio de Janeiro. It was found that the presence and continuity of some of these risk factors lead to an increase in internalizing and externalizing behavior. Similarly it was observed that when there is absence or reduction of some of these risk factors in a child's life, a decrease is observed in the internalizing and externalizing problems studied. These aspects reinforce the importance of investing in the issue of violence affecting children and adolescents. For instance, physical violence between a child's grandparents was associated with the presence of more externalizing problems; likewise, a reduction in severe parental physical violence against the child leads to a decrease in these behaviors. Both forms of violence point to the importance patterns of behavior learned within an aggressive family context contribute to children's dysfunctional development.

Physical violence between a child's grandparents was associated with the presence of more externalizing problems; likewise, the reduction of severe parental physical violence against the child leads to a decrease in these behaviors. Both forms of violence point to the importance patterns of behavior learned within an aggressive family context contribute to children's dysfunctional development.

Parental violence is transmitted to their children and predicts the children's developmental trajectories of externalizing problems (28, 29). Also, social information processing theory posits that children approach situations with biologically determined capabilities, along with memories accumulated through past experiences (30). The way children behaviorally respond to situations is based on how they encode, interpret, and evaluate possible responses (31). In this way, children who have been abused tend to misread social cues in instances where threats

are unclear or unintended, and overestimate the hostile intentions of others. Through this process, the child or adolescent takes on the role of the aggressor against others who are perceived as hostile (32). The literature provides significant empirical support for the association between direct child physical abuse and increased externalizing behaviors (33, 34).

The absence of parental verbal aggression against the child is related to less internalizing and externalizing behavior. That form of violence, which is expressed through insult, depreciation and humiliation, is sometimes more prejudicial to a child's mental health than direct physical violence, especially in a culture such as that in Brazil, where violence is relatively accepted in the education of children (35). Moreover, verbal aggression is very prevalent in environments with a lack of parental involvement, their lack of awareness of their children's behavior and with poor communication (36, 37). Living in a respectful environment where everyone is accepted with their particular idiosyncrasies, is one of the ways to think about prevention and intervention in mental health problems of children.

Another aspect observed is that in the absence of physical violence between siblings, internalizing and externalizing problems decreased. Moreover, very little recent research has been conducted with regard to the effects of violence on siblings to children's mental health problems (38, 39). It is the least studied form of family violence, but is probably the most prevalent. Renner affirms that children who are exposed to sibling violence are not likely to be immune to its adverse effects (32).

All children and adolescents have, individually and collectively, a human prerogative of change, of transformation and reconstruction, even in very adverse conditions, and can become the protagonists of life

based on peace, well-being and happiness. According to the World Health Organization (WHO), it is important to emphasize social skills and the acquisition of competencies as prevention strategies for violence at school. Dialogue, the creation of pacts of coexistence, support and establishing bonds of trust and information are effective tools in preventing such violence and consequently mental health problems (40).

In relation to sociodemographic factors, boys tend to develop more externalizing problems than girls (41). During the course of the study, research revealed that internalizing behavior increased over time for girls only, and externalizing problems decreased over time for both sexes (11). The biological and sociocultural factors of being a boy and being a girl explain the distinction of these problems by gender.

The other sociodemographic aspects investigated: education of the mother, poverty, and parents' occupation proved not to be relevant for the development of internalizing or externalizing problems. Although studies show that in poorer environments a great deal of adversities and violence occur (42) and behavioral problems among children are more common (43), several factors may intervene. In this study, the difficulty may be due to the fact that the sample was restricted to the lower-income socioeconomic strata. Regarding the socioeconomic level of the families investigated – which was on the rise in the period investigated as a result of the economic growth that has been occurring in Brazil – it is noteworthy that it should not be interpreted as a guarantee of improved living and health conditions, since extra income was spent on basic products and needs that did not substantially affect the families' form of social inclusion (21).

It is also relevant to point out the importance of variables less investigated in violence studies: sibling and grandparent violence.

These relationships are crucial to understand the family as a system, that need to be addressed in order to reduce domestic violence (44).

It is relevant to stress the existence of common risk and protective factors for internalizing and externalizing problems, such as those found in this study: parental verbal aggression, sibling violence and violence at school (45). These facts must be viewed in light of the frequent existing comorbidity, requiring more detailed studies on this issue. The complexity of the issue is greater because some factors contribute uniquely to the longitudinal development of each behavior problem, while others contribute to both as shared etiological, family and social factors, even after the initial levels of internalizing and externalizing problems are taken into account (28, 46).

In terms of the limitations of the study, the following aspects should be stressed: the data are derived from a population with low purchasing power and living with high community violence, making it difficult to ascertain the possible influence of these issues. The use of the caregiver's self-report alone, as well as the reduction of the sample analyzed, due to incomplete information in the variables, are also limitations. The lack of investigation of comorbidities in this study is a relevant aspect, since the comorbidities of different types of behavior problems may associate differently with the various facets of school violence in the family and community. Certainly, this is an aspect to be investigated in future research. Other aspect is that more complex regression models, like mixed models, should be used in the future to better explore the data.

Future studies should examine the relationship between poverty, violence exposure and mental health, focusing on the function of mediators and protective variables in pathways to mental health problems. Besides

that, a qualitative approach could improve the knowledge of this relationship. Also, the use of quantitative methods, such as the structural equation model could be useful.

Conclusion

The importance of identifying risk factors associated with the internalizing and externalizing symptomatology should be stressed, as it may assist the pediatrician or other professionals who deal with children in daily care. The results also open up opportunities to consider circumscribed preventive proposals, focusing on family and school violence. Although it is difficult to effect change when a pattern of dysfunction or abuse has started in the family (47), primary preventions have to target family violence and foster resiliency in children who are victims of family violence. So, it is important to stress that there is growing interest in

the investigation of mechanisms that help in the reduction of family and school violence, as well as in the strategies of prevention (48, 49). Furthermore, implementation of gender-specific programs is necessary, given that the influence of school and family context operate in different mechanisms across gender (29).

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