Family interactions and the involvement of adolescents in bullying situations from a bioecological perspective

Interações familiares e envolvimento de adolescentes em situações de bullying na perspectiva bioecológica

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Abstract

Exposure to school bullying is a situation experienced in children and adolescents’ routine and a few bullying complex conditions have not yet been sufficiently explored. Thus, this study’s objective aimed at synthesizing empirical evidence...
concerning the relationship between bullying and family variables in a theoretical model. Adopting a mixed design, the total sample included 2,354 students from 11 public schools who participated in the quantitative stage study. Data were collected using two scales. In the quantitative stage 55 students were randomly selected for semi-structured interviews. The results revealed that positive family interactions have a protective power in relation to bullying and victimization, while negative family interactions increase the risk of students becoming involved in such situations. The factors that influence students’ involvement in school bullying belonged to the analytical components of the Bioecological Model. The outcome helped a better understanding of bullying and provided empirical support for family inclusion in the issue.

**Keywords:** Adolescence; Family relations; Methodological triangulation; School violence.

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**Resumo**

A exposição ao bullying escolar é uma realidade para crianças e adolescentes, porém ainda não foram exploradas suficientemente algumas complexidades do fenômeno. Assim, este estudo objetivou sintetizar em um modelo teórico evidências empíricas sobre a relação entre bullying e variáveis familiares. Com delineamento misto, a amostra total foi constituída por 2.354 estudantes de 11 escolas públicas, os quais participaram da etapa quantitativa do estudo, respondendo a duas escalas. Na fase qualitativa, 55 estudantes foram selecionados aleatoriamente para participar de entrevistas semiestruturadas. Os resultados revelaram que interações familiares positivas possuem poder protetivo em relação ao bullying e à vitimização, ao passo que interações familiares negativas aumentam o risco de envolvimento dos estudantes nessas situações. Os fatores que influenciam no envolvimento dos estudantes em situações de bullying na escola pertenciam aos componentes analíticos da Teoria Bioecológica. Os resultados permitiram ampliar a compreensão sobre o bullying e dão apoio empírico para incluir a família no debate sobre essa questão.

**Palavras-chave:** Adolescência; Relações familiares; Triangulação metodológica; Violência escolar.

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Exposure to repetitive, intentional acts of violence marked by power imbalance between peers, called bullying (Olweus, 2013), is a reality that has been repeatedly neglected in the children and adolescents’ school routine in Brazil. Studies have shown that about 20% of school age students have bullied and another 7% have been victims of such violence in schools (Oliveira et al., 2015, Oliveira et al., 2016). These prevalence rates are consistent with those found in other studies conducted in North America and Europe (Craig et al., 2009) as well as in Latin America (Félix, Alamillo, & Ruiz, 2011). Student involvement in bullying is associated with mental health problems, social difficulties and school failure (Crochik, 2016; Olweus, 2013; Patton, Hong, Williams, & Allen-Meares, 2013).

Understood as a relationship problem that emerges from primary relationships and establishes itself as a pattern of behavior in childhood, adolescence and adulthood, some family characteristics may contribute to the development of bullying (Patton et al., 2013). In this connection, in an attempt to explain the occurrence of the phenomenon, investigations have documented the interface between family variables and school bullying practice or victimization (Foster & Brooks-Gunn, 2013; Patton et al., 2013).

Regarding the protective factors of the family in connection with the involvement in bullying situations, it was observed that families with the presence of two parental figures and which are marked by understanding and by perceived support, where parents check homework and are aware of how children spend their free time, are less associated with aggression or victimization (Abdirahman, Fleming, & Jacobsen, 2013; Healy, Sanders, & Iyer, 2015; Oliveira et al., 2017). Similarly, the following are also protective factors: good communication at home, feelings of involvement and protection, positive relationships with the mother figure and good family climate (Shetgiri, Lin, & Flores, 2013).

As to vulnerability, bullying has been associated to negative parent-child involvement, manifest or perceived negative affection, use of physical punishment as disciplinary strategy, family conflict, lack of parental supervision, communication difficulties, negative perceptions of family, domestic violence, among other factors that have aroused the investigators’ interest (Barboza et al., 2009; Oliveira et al., 2017; Patton et al., 2013). These family variables, contextual and articulated with each other or with other macrosystemic factors, are suggested predictors or vulnerability factors for experiences as aggressors or victims in bullying situations.
Within this framework, the present study, inspired by the bioecological perspective, presents an understanding of the complex relationship between adolescent bullying and family variables based on empirical support and investigation results disseminated in the scientific literature. The theoretical-conceptual framework used in this investigation is summarized in the following topic.

**Introductory Aspects of Bioecological Theory of Development**

The Bioecological Theory of Development, proposed by Urie Bronfenbrenner, considers human development as contextual and continuous and does not just refer to the biological changes that mark the life cycle (Bronfenbrenner, 2011). From this perspective, developing people interact with ecological environments that are interpreted as a set of intertwined and interconnected structures (people, institutions, feelings, and relationships, for example) (Bronfenbrenner, 2011). One of the first paradigm changes proposed by the bioecological model is the conception of human development in an integrated and integrative way (Barboza et al., 2009; Boel-Studt & Renner, 2013).

Inherently complex, the bioecological model designs an understanding of people’s life processes and how they act therein. Emphasis is also given to the direction of development that is driven by objective and subjective elements, with no overlap of either one but an interconnection. Thus, it can be seen that development occurs through complex processes of reciprocal and active interactions, explained from the theoretical model Process-Person-Context-Time (PPCT) (Bronfenbrenner, 2011). These dynamic and interdependent cores (PPCT) encompass the developing individual, resources, relationships, environment and the processes that occur near or far from them. This allows the bioecological paradigm to be structured in five interconnected components/systems, which guide the theory and the investigations that use it as a theoretical reference, namely: (1) individual, (2) microsystem, (3) mesosystem, (4) exosystem and (5) macrosystem (Bronfenbrenner, 2011).

The microsystem refers to the environment within which people relate in an immediate context and the mesosystem is a set of interacting microsystems (Bronfenbrenner, 2011). The exosystem refers to a dimension in which the developing individual is not actively inserted, but events that affect him/her may occur, while the macrosystem corresponds to the most distant aspects of the individual development platform (Bronfenbrenner, 2011). These systems are conceived nested into each other, as “a set of Russian dolls” (Bronfenbrenner, 2011), and can be illustrated in a theoretical model like the one shown in Figure 1.

Studies have found that it is within the microsystems that a greater number of variables play a relevant role in promoting or inhibiting bullying behaviors. Family climate, quality of parent-child involvement, communication and discipline methods, interaction models, and monitoring practices are the factors mostly associated to the phenomenon (Oliveira et al., 2017; Patton et al., 2013; Shetgiri et al., 2013). At the mesosystem level, the fact that parents were acquainted with their children’s friends was associated with a decreased number of reports of bullying, while students faced by parents expecting exaggerated school scores were more often involved in aggression situations (Lemstra, Rogers, Redgate, Garner, & Moraros, 2011; Oliveira et al., 2017).

Ancillary factors such as parents’ education and working hours, as well as the violence level in communities and neighborhoods (exosystem), were the variables associated with the involvement in bullying situations (Fu, Land, & Lamb, 2013; Oliveira et al., 2017). In the macrosystem component, it was revealed that social and cultural beliefs about violence, as well as social inequality, contributed to increase the occurrence of bullying (Cuervo et al., 2012; Oliveira et al., 2017).

Figure 2 summarizes and presents the main findings about the interface between family and bullying reported in the literature.
Figure 1. Bioecological development model.

Figure 2. Bioecological model for bullying and family interface.
It should be observed that the approach of bullying and family interactions, from the bioecological perspective, offers two theoretical benefits to understand the phenomenon. Theory (1) claims the possibility of testing the influence of the family context on the individual’s involvement in bullying situations, and theory (2) allows a contextual analysis of climate and school violence. Approaches about individual characteristics, experiences with bullying and family, family involvement and aspects of the school environments investigated are prominent. This model further reveals the importance of investigating how the context, the phenomena and human activity are for the individuals. Thus, the meanings and the academic production based on this model addresses correlated environmental and individual factors, as proposed by this study, surpassing one-dimensional paradigms.

The investigation

The objective of this investigation was to synthesize and summarize in a theoretical model empirical evidence on the relationship between school bullying and family variables. The theoretical assumptions adopted were: (1) adolescent’s experience in the family microsystem are the most critical and most influential in bullying or victimization situations (Bibou-Nakou, Tsiantis, Assimopoulos, & Chatzilambou, 2013; Patton et al., 2013); (2) negative family interactions are vulnerability factors for involvement in bullying practices (Bibou-Nakou et al., 2013; Patton et al., 2013); and (3) positive family climate can be considered as a protective factor for bullying and victimization (Bibou-Nakou et al., 2013; Patton et al., 2013).

The assumption is that the proposed theoretical model will contribute, in an innovative and original way, to the theoretical development of the areas of Psychology and Education, as it (1) allows to close existing gaps in the approach of the phenomenon, especially in connection with Latin America and Brazil, and (2) deepens the understanding of bullying, which is often understood as being a phenomenon confined to the school environment.

Method

Participants

This population-based cross-sectional study grounded on the perspective of methodological triangulation included 2,354 students (female = 50.7%; mean age $M = 14.5$ years, $SD = 2.0$ years) from 11 public schools in one municipality of the interior of the State of Minas Gerais, Brazil. Those students answered two scales used in data collection. In the qualitative phase, 55 students were drawn (female = 47.0%, mean age $M = 15$ years, $SD = 2.0$ years) of the total participants. For the sample definition, the selection of strata (schools) with the method of Probability Proportional to Size was used (Szwarcwald & Damacena, 2008).

Instruments

Participants answered two questionnaire scales and, in the qualitative stage, gave script-oriented interviews. Thus, the instruments used were:

- **Peer Aggression and Victimization Scale (PAVS)** (Cunha, Weber, & Steiner Neto, 2011). This is a self-report instrument developed in Brazil to investigate peer aggression and victimization in the school context. The scale is composed of 18 affirmative statements describing specific aggressive behaviors. Examples: I teased my colleagues; my colleagues stole, searched or damaged my things. Scale items are assessed in a 5-point
Likert system by measuring the frequency of the studied behaviors (1-never; 2-almost never; 3-sometimes; 4-always; 5-almost always). For its application in this study the scale was adapted, with the author’s permission, and a definition of bullying was entered in its header. The scale structure, in relation to the sample group, was tested by factor analysis and according to the degree of fit of the data, being considered adequate.

- **Family Interaction Quality Scale** (FIQS) (Weber, Salvador, & Brandenburg, 2011). A self-report instrument developed in Brazil that assesses nine factors of family interaction, namely: (1) involvement; (2) rules and monitoring; (3) corporal punishment; (4) positive communication; (5) negative communication; (6) positive marital climate; (7) negative marital climate; (8) parental model; and (9) children’s feelings. The scale includes a total of forty items, measured using a 5-point Likert system (1-never; 2-almost never; 3-sometimes; 4-always; 5-almost always). Examples of the scale statements: My parents pat each other; my parents usually scold me; my parents usually criticize me negatively. The scale structure was tested by factor analysis in relation to the sample group and according to the degree of data fit, was considered adequate.

- **Semi-structured interview script**. The roadmap was developed based on the recommendations of the scientific literature on qualitative research and bullying (Minayo, 2014; Thornberg, 2011) and synthesized the study’s indicators, namely: (1) types of family interaction, the way they are configured and the feelings associated to; (2) what they consider bullying; (3) feelings associated with the practice of bullying or victimization; (4) how they solve their problems or bullying situations (resort to adults and/or friends); and (5) the perceptions of self, life and potential attachment figures of the family context. Examples of questions in the script: Tell me how your relationship with your parents is like? What is bullying to you? Do you think the way things happen in your home influence what happens with you at school? Follow-up questions were also used, such as: What do you mean? Could you give me examples?

**Procedures**

Data collection took place between August and October 2014. After briefing on the investigation objectives and procedures, collecting signatures in terms of agreement and consent forms, students collectively responded to the PAVS and FIQS scales. The application of the two scales lasted 50 minutes on average, in each class. From the scale respondents groups, students were selected at random for the semi-structured interviews that also took place in schools, conducted by the investigator in charge, in private rooms, without the presence of teachers or other students. The average time of each interview was 12 minutes. The interviews were audio-recorded and fully transcribed.

We opted for double-digit validation and all data obtained in the application of the two scales were typed and retyped in the Excel program so that, in case of disagreement, the investigator in charge would make the applicable corrections. Statistical analysis of the data was carried out using the IBM® SPSS® (version 21.0), and \( p < 0.05 \) was considered as statistically significant. In the qualitative analysis the Atlas TI software was used. The data were grouped by thematic similarity into minimal categories, which expressed a central idea and covered the items of the theoretical model adopted by a study based on the Bioecological Theory of Development.

All phases of the study followed the guidelines, requirements and ethical recommendations of Resolution 466/2012 of the National Health Council of Brazil. The project was submitted and approved by the Ethics Research Committee at EERP-USP (Opinion: 484.912/2013). The adolescents and their guardians also provided written agreement and consent, respectively, for voluntary participation in the investigation.
Results

Most participants had no involvement with bullying situations (74.2%); 10.3% of the students had practiced bullying and 10.1% had suffered bullying, while 5.4% had practiced and suffered some violence, according to the data collected using the "Peer Victimization and Aggression Scale" and the K-means clustering cluster analysis. A greater number of boys had been aggressor (7.4%) and victim aggressor (3.9%) compared to girls, while a greater number of girls had been victim (5.2%) compared to boys. Younger students attending the first grades of elementary school and the first year of junior high school were more vulnerable to victimization.

Through logistic regression tests it was found that students not involved with bullying situations enjoyed better family interactions quality ($p = 0.00$) when compared to aggressors, victims and victim-aggressors. Aggressors, victims and victims-aggressors had had more experiences in terms of physical punishment, negative communication and negative marital climate in their families. The dimension of quality of family interaction “rules and monitoring” ($OR: 1.21; p = 0.01$) had protective power, as the increase in their score reduced the possibility of qualification in one of the groups involved with bullying situations. On the other hand, the dimensions “physical punishment” ($OR: 0.84; p = 0.01$) and “negative communication” ($OR: 0.53; p = 0.00$) increased vulnerability conditions.

In the analysis of qualitative data, in general, it was found that the participants’ family involvement was positive, with reports of verbal and physical manifestation of affection and sensitivity of parents or guardians to support and recognize their children’s problems. Family dialogue openness was one of the issues that stood out in the narratives among all participants. Good relationship between the parental figures, including demonstration of affection, dialogue and respect between the parental couple were also mentioned. These positive aspects of family interactions emerged from the interviews and can be considered as protective against bullying or victimization in the school context.

On the other hand, participants revealed that negative or nonexistent communication, episodes of corporal punishment, and excessive parents’ working hours are inversely correlated with positive family events and can contribute to the students’ involvement in situations of aggression and violence in school. Low participation of parents in their children’s lives (level of family involvement), as measured by the reference made to few affection manifestations, lack of support and autonomy encouragement, were other elements extracted from the participants’ stories. In addition student victims and aggressors expressed feelings of helplessness in their families.

The family was also indicated by the participants as an educational space and accountable for the conveyance of principles, values and for the definition of what is “right or wrong”. For some of the students when there are deficiencies in this formation process, feelings of intolerance and poor empathy for the other develop, a condition that materializes into situations such as bullying in school. The qualitative data also allowed inference about potential association between the bullying problem and lack of family's preparation for a broad social life; this aspect was also highlighted by the participants.

Thus, empirical, quantitative and qualitative data allowed mapping the relationship between school bullying and family variables. In this connection, considering the Bioecological Development Theory and the theoretical models presented above, a synthesis of the study: results included the individual structure, microsystem, mesosystem, exosystem and macrosystem which are reported in Figure 3. Please notice that the study findings are printed in black, while aspects not covered in the investigation are in gray.
Discussion

This study used methodological triangulation to synthesize and summarize in a theoretical model, empirical evidence about the relationship between school bullying and family variables. There was a prevalence rate of 10.3% of aggressor students, 10.1% of victims and 5.4% of victim-aggressors among the participants. Boys practiced more bullying than girls. Younger students were more vulnerable to victimization, as were girls. Positive family interactions had a protective role on bullying and victimization, while negative family interactions increased the risk of student involvement in those situations. Other family issues such as place for ethical and moral development, supportive relationships, excessive working hours of parents and macrosystemic aspects were reported by participants.

Research data concerning the individual level is generally supported by other studies on bullying. A large epidemiological survey involving 79 countries found that approximately 30% of students reported bullying victimization in school, and 10.7% of boys reported having engaged in four or more episodes of physical abuse, compared with 2.7% of girls (Elgar et al., 2015). In Brazil, in the Rio Grande do Sul State, boys were more than twice as likely to be abusers as compared to girls (Rech, Halpern, Tedesco, & Santos, 2013).

In addition, girls have greater potential to break the cycle of violence in schools, as well as to be empathetic and supportive (Thornberg, Wänström, Hong, & Espelage, 2017). These differences between boys and girls were revealed in the individual ethical and moral assessment of situations of bullying and victimization that result in movements of empathy or indifference. These data on gender differences can also be considered an issue, when taking into account the roles and expectations around the experience of being male (competitive and aggressive, for example) or female (more sensitive and care-driven, for example) in the development process.
Regarding age, the scientific literature indicates that negative attitudes such as bullying decrease as age increases (Olweus, 2013), just as older students are more likely to support victims (Brighi, Guarini, Melotti, Galli, & Genta, 2012), as observed in the students’ narrative in the present study. In addition, early adolescence is a critical time when individuals begin to explore new social roles and seek status within their peer group, which can motivate aggressive behavior (Caravita, Sijtsema, Rambaran, & Gini, 2014).

However, in line with the assumptions of the Bioecological Theory, it is within the microsystem that most of the findings of this investigation was concentrated. The combined analysis of qualitative and quantitative data revealed that students not involved in bullying situations enjoyed better family interactions, suggesting an inverse pattern, i.e. negative family interactions, for students identified as aggressors, victims and victims-aggressors. Repeated experiences in the family microsystem lead children and adolescents to internalize patterns of behavior and attitudes that will shape their social conduct (Ashiabi & O’Neal, 2015; Bronfenbrenner, 2011; Patton et al., 2013).

According to scientific literature data, families of aggressors and victims are less functional than students’ families without involvement with the phenomenon. In Colombia, a study with 304 students found that the absence of affective bonds and dysfunctional families were more associated with bullying (Uribe, Orcasita, & Gomés, 2012). Another survey of 888 Australian students confirmed that aggressors and victims came from dysfunctional families (Murray-Harvey & Slee, 2010). This dysfunction is associated with difficulties in negotiating and cooperating with parents, impaired social skills, inadequate or nonexistent communication patterns, and lack of fondness and affection. As observed in the theoretical model built from empirical data, this dysfunctionality is present within the microsystem and is associated with those aspects that make students more vulnerable, causing them to be more prone to bullying practice or victimization.

At the mesosystem level, it may be observed that families that support their children can help those who are bullied break the cycle of violence and abuse, strengthening them and helping them develop coping mechanisms to deal with bullying and victimization (Bibou-Nakou et al., 2013; Patton et al., 2013). However, not only is parental intervention relevant to breaking the inertial movement of aggression, but also a greater involvement of parents and caregivers with their children’s school, through participation in meetings and collegiate events or other actions that may influence student behavior at school (Shetgiri et al., 2013).

Within the framework of the exosystem, in the interviews with adolescents, aggressors and victims complained about the short time spent with their parents due to their extended working hours. Studies (Christie-Mizell, Keil, Laske, & Stewart, 2011; Lemstra et al., 2011) indicate an increased propensity for victimization and bullying when the paternal figure has extensive professional occupation or overtime work. Working conditions can cause high stress in adults due to economic uncertainties or even the need to work long hours to try to maintain the same standard of living and family subsistence (Lemstra et al., 2011). This scenario is quite adverse as it represents a reduction in the time available to parents or caregivers to accompany, supervise and get emotionally involved with their children (Christie-Mizell et al., 2011).

These constituent aspects of the social and cultural environment cross the other levels (which are theoretical and interconnected), to enhance or inhibit processes that are constitutive of the historical-cultural man (Bronfenbrenner, 2011). This field includes both macrosystemic issues and socioeconomic conditions, diversity intolerance and social and cultural beliefs, as explored at different points in this discussion, and even the variables that pertain to the individual dimension, aspects that have been associated with aggressive behavior or to bullying victimization in other studies (Caravita et al., 2014; Oliveira et al., 2017).

**Conclusion**

The Bioecological Theory proved to be a theoretical framework capable of bringing advances that enhance the analysis of the existing interface between bullying and family interactions. In this connection,
the reference data allowed identifying different levels of factors that influence the involvement of students in bullying situations, including individual characteristics, the microsystem, mesosystem, exosystem and macrosystem. The results allow us to expand our understanding of bullying; this is a relevant aspect of the literature produced within Latin American, especially in the Brazilian scenario, which focuses, as a rule, on diagnoses or on the characterization of bullying occurrence in schools.

Despite these strong points, some limitations of the study should be noted when interpreting the results. First, the quality of family interactions was measured only based on the students’ reports. Other investigations could include parents and caregivers as informants to broaden the scope of this study’s discussions. Second, although bullying self-reports are commonly used in investigations that address this subject, they can introduce biases that need to be corrected by data collection techniques such as peer naming or the identification of victims and aggressors by teachers. Third, the cross-sectional nature of the study precludes the establishment of a causal relationship between variables, which could be minimized through longitudinal research or sequential follow-up of students and their families.

Contributors

W.A. OLIVEIRA was responsible for the conception and design, analysis, interpretation of data and writing of the article. J.L. SILVA, J.E.R. FERNANDEZ and M.A SANTOS collaborated in the analysis, interpretation and discussion of the data, and in the revision of the final version. S.C.S. CARAVITA and M.A.I. SILVA were responsible for guiding, reviewing and approving the final version of the manuscript.

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