



ARTIGO

## Aggressiveness in boys and girls: evaluations made by mothers

*Agressividade em meninos e meninas: avaliações feitas por mães*

*Agresividad en niños y niñas: evaluaciones hechas por madre*

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**Abstract:** Aggressiveness can be defined as any form of behavior intended to hurt a living being. It can be characterized as direct aggression, more common in boys' behavior, and hostile aggression, more often practiced by girls. Objective: to describe and compare the frequency of direct aggressive behavior in children, considering: gender, age, family economic class and parenting styles. Method: 47 mothers of boys and girls were investigated, who responded to the Child Behavior Checklist for Ages 6–18, the Parenting Style Inventory and to the Brazilian Economic Classification Criteria. Results: no differences were found in the manifestation of aggressiveness in the studied variables and a weak negative correlation was found between parenting style and aggressiveness. Conclusions: to understand the development and maintenance of aggressive behaviors in childhood, interactions between environmental, biological, social, cultural, family and historical factors should be considered. The role of father figure, not assessed in this study, during development, is discussed.

**Keywords:** aggressiveness; behavior problems; parenting styles; child development.

**Resumo:** Agressividade pode ser definida como qualquer forma de comportamento destinada a machucar um ser vivo. Ela pode ser caracterizada como agressividade direta, mais apresentada em meninos, e hostil, mais utilizada por meninas. Objetivo: descrever e comparar a frequência da agressividade direta em crianças, considerando: sexo, idade, classe econômica da família e estilos parentais. Método: foram investigadas 47 mães de meninos e meninas que responderam ao *Child Behavior Checklist For Ages 6-18*, ao Inventário de Estilos Parentais e ao Critério de Classificação Econômica Brasil. Resultados: não foram encontradas diferenças na manifestação da agressividade nas variáveis estudadas e fraca correlação negativa entre estilo parental e agressividade. Conclusões: para a compreensão do desenvolvimento e manutenção de comportamentos agressivos na infância, devem ser consideradas interações entre fatores ambientais, biológicos, sociais, culturais, familiares e históricos. Discute-se o papel da figura paterna, não avaliada nesta pesquisa, durante o desenvolvimento.

**Palavras-chave:** agressividade; problemas de comportamento; estilos parentais; desenvolvimento infantil.

**Resumen:** La agresividad se puede definir como cualquier forma de comportamiento destinada a lastimar a un ser vivo. Se puede caracterizar como agresividad directa, más presentada en niños, y hostil, más utilizada por niñas. Objetivo: describir y comparar la frecuencia de la agresividad directa en niños, considerando: sexo, edad, clase económica de la familia y estilos parentales. Método: fueron investigadas 47 madres de niños y niñas que respondieron al *Child Behavior Checklist For Ages 6-18*, al *Inventario de Estilos Parentales* y al *Criterio de Clasificación Económica Brasil*. Resultados: no se encontraron diferencias en la manifestación de la agresividad en las variables estudiadas y débil correlación negativa entre estilo parental y agresividad. Conclusiones: para comprender el desarrollo y mantenimiento de comportamientos agresivos en la infancia, se deben considerar las interacciones entre factores ambientales, biológicos, sociales, culturales, familiares e históricos. Se discute el papel de la figura paterna, no evaluada en esta investigación, durante el desarrollo.

**Palabras clave:** agresividad; problemas de comportamiento; estilos parentales; desarrollo infantil.



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During human development, throughout life, by a person's interactions with several environmental systems – since those everyday environments of face-to-face relationships, as in the family and at school, as well as cultural systems –, competences and dysfunctions emerge in various fields (such as cognitive, relational and moral) (Bronfenbrenner, 2002). Psychological problems can be considered as disorders in children's development. Achenbach and Rescorla (2010) propose a classification that includes internalizing and externalizing problems (Rescorla et al., 2007). Internalizing problems are those that most affect the inner world of the subject, such as depression, anxiety, and somatic complaints. And, externalizing problems refer to problematic behaviors directed to the outside world. Aggressiveness, hyperactivity, and disruptive behaviors are included in this set of behaviors. (Rescorla et al., 2007). Aggressiveness stands out among external problems.

Complaints of externalizing psychological problems, especially of aggressiveness in school-age boys, constitute the greatest demand for psychological counseling in School Services of Psychology courses in Brazil (Dewes, 2012; Konrat, 2012; Merg, 2008; Wielewicki, 2011). Merg (2008) presented a literature review study about demands of psychological care in these services, indicated that the clientele profile had not been changing over time, and that the most frequent complaints were related to problems of external behaviors of school-age boys. According to the author, externalizing type complaints would be less tolerated in family and school environments, where problems of this nature are often detected and where clinical referrals are performed.

On the other hand, Konrat's (2012) later research indicated that, although there was predominance of aggressiveness complaints in boys referred to these psychological services, the number of girls with this complaint was increasing in referrals. Also, sometimes, most frequent aggressive behaviors are considered to be risk factors for criminal behaviors and for law disrespect in adulthood (Kalvin & Bierman, 2017; Liu, 2004). Lins, Alvarenga,

Paixão, Almeida and Costa (2012) suggest that, in some cases, external problems may intensify and extend to later stages of development, and may be associated with more severe psychopathologies. In this sense, the authors highlight the importance of knowing and understanding the externalizing problems and their role in development, to sustain relevant interventions.

Generally, an aggressive act can be considered as any form of behavior intended to hurt or injure a living being (Ehrenreich, Beron, Brinkley & Underwood, 2014; Liu, 2004; Pavarino, Del Prete & Del Prete, 2005; Shaffer & Kipp, 2010). The aggressiveness is manifested not only by motor, more violent actions, but also by other forms of behavior, such as aid refusal or irony. Some authors suggest the distinction of direct (or instrumental) aggression from hostile (or indirect) aggression. Direct aggression is manifested by behaviors with use of force (such as punches, kicks and others), in order to physically harm the other. Hostile aggression manifests itself in subtle and veiled behaviors (such as gossip, "giggling", disdain) to inflict harm on the other's inner world (Liu, 2004; Pascual-Sagastizabal et al., 2014; Shaffer & Kipp, 2010). It is common to differentiate between genders regarding such classification. The direct aggression would be mostly presented in boys' behavior, whereas the hostile aggression would be the one practiced by girls (Broidy et al., 2003; Dewes, 2012; Liu, 2004; Nivette, Eisner, Malti & Ribeaud, 2014; Merg, 2008; Pascual-Sagastizabal et al., 2014; Shaffer & Kipp, 2010).

In the several theoretical contributions about the phenomenon of human aggressiveness, there are models that privilege, in a greater or lesser extent, biological, emotional, social, environmental, as well as cultural and historical aspects. Ferguson, San Miguel and Hartley (2009), Lins et al. (2012), Leme (2004) and Silva, Lucatto, Cruz and Martins (2015) point to the interaction of these variables acting as risk factors in the development of aggressive and violent behaviors among children and adolescents.

The presence of aggressive behavior would be more frequent (and more noticeable) at five

and six years old. These ages coincide with the beginning of primary school when children are faced with new tasks, having new challenges in adapting to diverse situations, including new socialization patterns under teachers' supervision (Shaffer & Kipp, 2010; Silva et al., 2015). Generally, literature points to three possible trajectories for the course of aggressiveness during a person's development, identified by longitudinal studies of aggressiveness measurement (Broidy et al., 2003; Ehrenreich et al., 2014; Henninger & Luze, 2013; Shaffer & Kipp, 2010). The first trajectory is that of children who never or hardly manifest aggression, maintaining this pattern throughout their development. The second trajectory is that of individuals with high levels of aggressiveness in childhood, with maintenance of these levels in adolescence and adult life. The third and most common trajectory is that of children who present some or very aggressive behavior at five or six years old, decreasing when they reach adolescence (presenting low levels of aggressiveness in adult life).

Elements of emotional intelligence, empathy and prosocial behaviors development are pointed out as interveners in the aggressiveness development, going towards it (García-Sancho, Salguero & Fernández-Berrocal, 2014). Kalvin and Bierman (2017) conducted a longitudinal study in the United States of America with 754 participants to assess the interaction between different risk factors associated with the commission of violent crime in adult life. They found that not only high levels of aggressiveness in childhood were related to violent crime, but their association with greater emotional unrest, also in childhood, was a strong predictor for this type of crime in adult life.

From a Darwinian perspective, aggression refers to the intrinsic processes of animal biology as an instinct for the survival and maintenance of the strongest (Dewes, 2012). The higher levels of testosterone hormone present in boys could be related to the differences found in manifestation of their aggressiveness, if compared to girls (Pascual-Sagastizabal et al., 2014; Shaffer & Kipp, 2010). This condition is also found in other species,

in which such hormone has positive correlation to the development and maintenance of aggressive behavior. This correlation can also be considered as the result of sexual selection, by which the stronger and more aggressive males achieved greater reproductive success by having more chances to mate and provide resources to their females and their offspring (Liu, 2004; Nivette et al., 2014; Pascual-Sagastizabal et al., 2014).

In addition to this biological component, cultural factors also interact in determining differences in the manifestation of aggressiveness between boys and girls. In certain cultures, for example, parents reaction to aggressive behavior of their daughters is quite different from the reactions to these behaviors when manifested by their sons; parents tend to react more negatively to aggressive behaviors of girls than boys (Dewes, 2012; Konrat, 2012; Lins et al., 2012; Shaffer & Kipp, 2010). Parenting styles, defined by Gomide (2006) as the strategies and techniques used by parents in raising children, have also been related to the development of aggressiveness. These styles (whether authoritarian, coercive or permissive) correlate with aggression because of education effects on the emotional control and rule-making development in children (Pascual-Sagastizabal et al., 2014; Shaffer & Kipp, 2010).

The considerations that add data of higher prevalence of boys in referrals for psychological care, association aspects with risks to the development and lack of national contributions in relation to the vast international literature on the subject constitute the justifications of this work. The purpose of the study was to describe and compare the frequency of aggressive behaviors (direct type) in children referred by their mothers, considering: gender, sub-age groups (7/8 and 9/10 years old), family economic class (A/B, C/D/E) and parenting styles.

## Method

### Participants

The study included 47 mothers (interim mothers or stepmothers) of children, boys and girls (from 7 to 10 years old) who were living with them, in

a situation of (co) responsibility care, for at least six months. These mothers were residents in a medium-sized municipality of the *Baixada Santista* region, in *São Paulo* State. The sample was chosen by convenience and accessibility criteria, being characterized as intentional and non-probabilistic.

### Instruments

To evaluate the direct type aggressiveness, the Child Behavior Checklist for Ages 6-18 (CBCL) was used (Achenbach & Rescorla, 2010). The CBCL evaluates competences and problems, which can be internalizing and externalizing. One of the subscales that composes the scale of externalizing problems is the Aggressive Behavior Scale, which was used as reference in this study. The CBCL scores were obtained through the instrument correction software, Assessment Data Manager Program, and evaluated in a "non-clinical" range (64 points or less), indicative of resources, "borderline" range (between 65 and 69 points) and "clinical" range (70 points or more), indicative of clinical problems with probable intervention needs. The instrument has preliminary validation data presented by Bordin, Mari and Caeiro (1995) and Rocha et al. (2013).

To evaluate the parenting style, we used the Parenting Style Inventory (PSI) (Gomide, 2006). Composed of 42 questions about how parents educate them, this is a psychological test, with questions distributed to include seven educational practices: positive monitoring, moral behavior, inconsistent punishment, neglect, relaxed discipline, negative monitoring, and physical abuse. The Parenting Style Index is calculated by adding the points obtained in the positive practice questions that are subtracted from the sum of the negative practice points. The index results interpretation follows the value of the obtained percentile, being considered "positive parenting style" values above 75; "good parenting style, above average" values between 55 and 70; "good parenting style, below average", values between 30 and 50; and "parenting risk style", values below 25.

For the economic classification of the sample, the Brazilian Economic Classification Criteria

(CCEB) was used, which evaluates economic classes based on consumer goods and education level of the head of the family (Associação Brasileira de Empresas de Pesquisa [ABEP], 2015).

### Procedures

This research was approved by the Research Ethics Committee of the educational institution in which it was developed as a project to obtain a master's degree, and by the Education Department of the municipality where the collection was made.

Data collections took part in municipal schools of a city in the *Baixada Santista* region, on Parent-teacher meetings days, in which there was the largest concentration of parents possible within the school. As agreed with administration of the schools, the invitation to participate in the survey was made when the mothers left the parent-teacher meeting in the school corridors. It is noteworthy that in addition to mothers, there were also grandparents, aunts, fathers and older siblings present at these meetings - which characterized them as ineligible for the research, as it focused only on evaluations made by mothers. Participants who incompletely answered the questionnaires were excluded from the sample.

After explaining the objectives of the research, instruments to be answered and estimated time to complete the questionnaires, the mothers signed a Free and Informed Consent Form (FICF), with a copy for them, signed by the responsible researcher. The instruments were self-administered, so the mothers answered them individually, only about one of their children, when they had more children within the age range of the research (the choice of the child was evaluated by the mother herself, after explaining the goals of the research).

Descriptive measures (mean and standard deviation) were obtained for each of the interest variables (gender, age, family economic class, parenting style and aggressiveness). To explore possible interactions between the Aggressive Behavior Scale, from CBCL, and variables gender (boy or girl), age (grouped in 7/8 years and 9/10 years) and family economic class (grouped in A/B and C/D/E), Student's t-test was used. To verify

possible correlations between aggressiveness and parenting styles, Pearson's Correlation was used with parameters for analysis according to Cohen (1988). Data analysis was performed with the SPSS Statistics 24.0, with confidence level at 95%. The power effect of the sample was calculated using GPower 3.1.

## Results

The sample consisted of 47 evaluations of mothers, 26 of them about daughters (55.3%). Regarding age, 25 children were in the 7 and 8 years old age group (53.2%) and 22 were in the 9 and 10 years old age group (46.8%). The economic classification obtained using Economic Classification Criteria showed that 23 of the families were located

in the economic range A and B (48.9%) and the remaining 24 families in the C, D and E (51.1%) ranges.

Descriptive measures (mean, standard deviation, minimum, maximum and percentage in borderline and clinical scores) for the Aggressive Behavior Scale of the CBCL according to child sex, age and family economic class are presented in Table 1. No significant differences were found for the expression of aggressive behaviors reported by mothers between boys and girls ( $p=0.882$ ; mean difference= $-0.357[-4.475;5.189]$ ; power effect= $0.067$ ), younger and older children ( $p=0.334$ ; mean difference= $-2.264[-2.504;7.031]$ ; power effect= $0.244$ ) and regarding to family economic class ( $p=0.642$ ; mean difference= $-4.158[-8.800;-0.485]$ ; power effect= $0.554$ ).

**Table 1** – Descriptive measures of the Aggressive Behavior Scale, according to sex, age ranges, family economic classes and total sample values

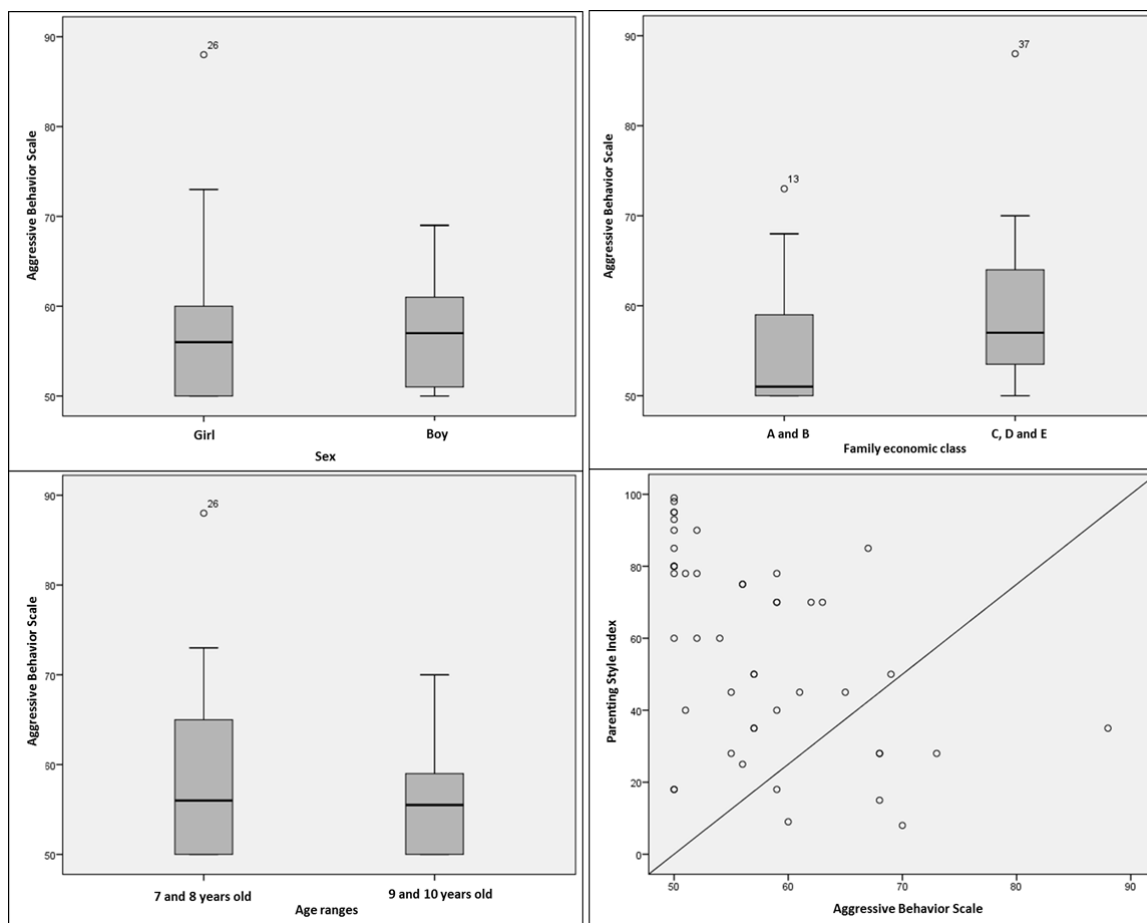
		Mean	Standard deviation	Minimum-maximum	% in borderline/clinical scores
Child's sex	Girl	57.5	9.35	50-88	19.23
	Boy	57.14	6.42	50-69	19.04
Child's age range	7 and 8 years	58.4	9.49	50-88	28
	9 and 10 years	56.14	6.14	50-70	9.09
Family economic class	A and B	55.22	6.95	50-73	13.04
	C, D and E	59.38	8.71	50-88	25
Total		57.34	8.090	50-88	19.14

Note: table elaborated by the article's author. Data collected by the authors in 2016.

The Parenting Style Index presented median values ( $57.13 \pm 27.23$ ) evaluated as good by the instrument. Of these, 46.8% could be classified as regular or risky. There was a weak negative correlation between the Aggressive Behavior

Scale and the Parenting Style Index ( $r=-0.492$ ;  $p<0.01$ ; power effect= $0.999$ ), according to Cohen (1988). In Figure 1 the results to the Aggressive Behavior Scale and associations with the variables studied are presented graphically.

**Figure 1** – Distribution of Aggressive Behavior Scale according to sex, age ranges, family economic class and parenting style



A: Aggressive Behavior Scale according to sex; B: Aggressive Behavior Scale according to family economic class; C: Aggressive Behavior Scale according to age ranges; D: Aggressive Behavior Scale and Parenting style Index. Note: the outliers shown in the figure were not discarded from the sample, as it is expected that some children presents high levels of aggressive behavior.

## Discussion

No differences were found for the manifestation of aggressive behaviors, evaluated by mothers, among boys and girls in the sample, regardless of the low power effect of the sample in the statistical test performed. Several works that compare boys and girls can be found in the literature, seeking to find differences and similarities in the manifestation of aggressiveness and also to better understand their origins. Pascual-Sagastizbal et al. (2014) investigated 159 children with 8 years old, in order to examine the relationship between parenting styles, androgen hormones levels and aggression measures of physical (direct) and hostile aggression types in boys and girls. Results showed an association between higher

levels of testosterone and higher levels of direct aggression in boys with authoritarian mothers. An indication that the hormone controlled the relationship between authoritarian parents and aggressiveness in girls was also found.

To better understand the interaction of gender (biological aspect) and social roles played by the parents (cultural aspect), Nivette et al. (2014) evaluated 863 children, from 7 to 13 years old, residing in Zurich, Switzerland. Results indicated that there was a greater difference in the manifestation of aggressive behaviors in children with parents born in countries with greater differences between genders. However, this effect was small compared to that determined by the child gender (boys presented greater direct aggression).

In Brazil, Lins et al. (2012), in a review of the Brazilian literature about aggression and externalizing problems, have found, from years 2000 to 2010, only eight articles that compared boys and girls. Of these, four studies found any difference in the manifestation of aggressive behavior/externalizing problems between boys and girls and the other four found no difference between them. Although they evaluated children with different ages than those evaluated in this study, similar results were obtained, since they did not find differences in the manifestation of aggressive behavior between boys and girls.

Emerich, Rocha and Silveiras (2012) sought to analyze the effect of gender on the CBCL scales in a sample of 1228 fathers and mothers of Brazilian children (different cities of origin, ages 6 to 11). Results indicated significant differences in aggressiveness (Aggressive Behavior Scale) among boys and girls in the sample, and boys presented more aggressive behaviors than girls. The authors discuss the results with findings of multicultural validation of the CBCL (Rescorla et al., 2007) in which, in 17 of the 28 studied societies, they also found significant differences between the genders in the manifestation of aggressive behaviors. In the present study, these differences were not found, in agreement with 11 of the societies studied by Rescorla et al. (2007).

In characterizing the child and adolescent clientele who sought care in a psychological evaluation clinic in Rio Grande do Sul (Brazil), Borsa, Segabinazi, Stenert, Yates and Bandeira (2013) investigated 59 children and adolescents (ages 6 to 18 years) using CBCL, and found no significant difference for the manifestation of aggressive behavior between boys and girls in the sample. The comparison of the results of the present study with that of Borsa et al. (2013) is restricted in terms of the participants' ages, since the authors of the study do not distinguish between children and adolescents in the data analysis. In Borsa et al. (2013) study, the prevalence of internalizing problems in the sample is high, both among boys (n=45) and girls (n=12).

Changes in what was expected (boys do

not present greater aggressiveness), from a biological perspective, can be understood in the light of endocrine disruptors, which are substances exogenous to the human body that can interfere in the synthesis, secretion, transport, metabolism or elimination of hormones (Castro-Correia & Fontoura, 2015). These substances are present in cosmetics, plastic packaging, building materials, paints, resins, and are also discarded in by-products of industrial processes (Bernardo, Navas, Murata & Alcântara, 2015). Therefore, contamination by endocrine disruptors can occur orally, by inhalation, by contact with the skin, throughout the life and by exposure during the gestational period (Lara, Duarte & Reis, 2011).

Phthalates, bisphenol A (BPA), pesticides and polychlorinated biphenyls (PCBs) are endocrine disruptors that specifically affect the trajectory of estrogen hormones, inhibiting or mimicking their synthesis. The effects of the contamination by these substances in humans and other animals permeate the entire spectrum of functions that the estrogen hormones (and lack of them) present in the body, such as decreased fertility, libido, malformations of the sex organs, precocious puberty, behavioral changes (such as "masculinization" of girls), among others (Castro-Correia & Fontoura, 2015; Lara et al., 2011).

Perez-Lobato et al. (2016) investigated the association between environmental exposure to BPA and behavior in 300 boys (ages 6 to 11 years) residing in Granada, Spain. For this, they analyzed the concentration of BPA present in the urine of the boys and measured behavioral aspects using CBCL. Results indicated that boys who presented higher concentration of BPA in the urine, also presented higher scores for internalizing type problems. Suggestions are made of a process of "feminization" of boys because of contamination by BPA. In Brazil, there is a lack of literature about levels of endocrine disruptors present in the environment, which could explain, in part, hormonally regulated behavioral differences between genders.

Lins et al. (2012) discuss the importance of the gender variable not be evaluated in isolation. They suggest, then, to take into account cultural

factors that may interact in the manifestation of aggressive behaviors in children. Ferguson et al. (2009) they point to the interaction of factors such as peer influence, antisocial personality traits, childhood depression and psychological abuse by parents in their love relationships as risk factors for the development of aggressive and violent behavior in American adolescents.

There was a weak negative correlation between the manifestation of aggressive behaviors, reported by mothers, and more positive parenting style. In their literature review, Lins et al. (2012) found 13 works that were investigating the relationships between educational practices and parenting social competences. Of these, nine studies have found links between coercitive educational practices and aggression in children. In the other six articles, negative correlations were found between parenting social competences and aggressive behaviors in children.

Using CBCL and PSI, Salvo, Silveiras and Toni (2005) carried out a study aiming at finding out which educational practices could be predictive of competences, internalizing and externalizing problems. To that end, the CBCL and the PSI were applied in 30 children (ages 11 to 13 years) from the public school system and in one of their parents. A statistical regression of the data indicated that positive monitoring and moral behavior were predictive variables of prosocial behaviors, and their lack allied to negative practices were predictors of behavioral disorders. Aggressiveness was related to low rates of mothers' positive monitoring.

Researches using the PSI show a great deal of association regarding the negative correlation between aggressiveness and positive parenting practices, which occurs at moderate and strong levels, a result not found in this research. In the referred research, children older than the present study were evaluated and, in addition, paternal parenting styles were also considered, which also predicted their children's behaviors. In Toni and Silveiras (2013), paternal neglect and lack of paternal moral behavior were predictors of externalizing problems in the adolescents studied. The authors discuss the role of the paternal

figure for the development of moral behavior, the creation of rules and values during development.

No significant differences were found in the manifestation of aggressive behaviors, reported by mothers, among younger and older children. Rocha et al. (2013) analyzed and compared a Brazilian and an American sample of children (six to 11 years old), according to the perceptions of parents who responded to the CBCL and found no significant effect of age on the manifestation of children's externalizing problems (divided into younger children [6 to 8 years old] and older children [9 to 11 years old]). However, note that 28% of the youngest children in the present sample (7 and 8 years old) were in the borderline or clinical range, evaluated by CBCL, whereas 9.09% of older children (9 and 10 years old) were in these same ranges.

No significant differences were found in the manifestation of aggressive behaviors reported by the mothers, among children of families of economic classes A and B and families of economic classes C, D and E. The instrument used (CCEB) evaluates economic classes based on purchasing power, according to data from the Family Budget Survey of the Brazilian Institute of Geography and Statistics. The result found in this research, that there were no differences between the groups evaluated, may be due to the exclusively economic characteristics of the class definition adopted in the CCEB (ABEP, 2015). Even though there were no significant differences, it is important to note that 13.04% of children in economic classes A and B were in the borderline or clinical range, evaluated by CBCL, while 25% of children in economic classes C, D and E were same bands.

## Conclusions

The research aimed to describe and compare the frequency of direct aggressive behavior in children, considering: gender, age (7/8 and 9/10 years old), family economic class (A/B and C/D/E classes) and parenting styles. The sample consisted of 47 mothers of boys and girls, accessed at three schools of the municipal teaching network of the city of Santos (SP), by criteria of convenience and accessibility.



No significant differences were found for the manifestation of aggressive behaviors reported by these mothers between boys and girls, younger and older children and by family economic class. Also, a weak negative correlation was found between more positive parenting practices and aggressive behaviors in.

In the present study, only the evaluations made by mothers about the behavior of their children and their parental style were considered, which constitutes an important limitation of the research. The instruments that make up ASEBA have good consistency among multiple respondents (Bordin et al., 2013). However, differences in the parents' perception of the children's behaviors are pointed out in the literature. These differences are larger for perceptions of children's behaviors than for adolescents (Alakortes et al., 2017; Duhig, Renk, Epstein & Phares, 2000). It is necessary to expand this research to include paternal perceptions about the children's behavior as well as paternal parenting styles. It stands out that the sample presented in this study had low power effect to evaluate the differences between boys and boys regarding the manifestation of aggressive behaviors reported by their mothers, compromising its external validity and being characterized as another important limitation of the study - and is indicated as suggestion for future investigations in other samples of Brazilian children.

Family and socioeconomic aspects such as parentalemployability, psychopathologies present in children and parents, family organization, siblings, family income, neighborhood peculiarities where the child resides, peer influence, among others, were not considered in the present study. These aspects also interact in the manifestation of aggressive behaviors by children and adolescents. It is indicated the extension of the study on aggressiveness taking into account some of these aspects. Also, biological aspects (such as hormones, regulators and endocrine disruptors) in interactions with housing issues, voluntary or involuntary exposure to environmental contaminants, access to water treatment, consumption patterns, nutrition and

others, are factors to be evaluated in future research. It is suggested that the measurement and evaluation of such factors may help to understand the interactions between human behavior and the environment - in their physical, biological and social dimensions.

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