

Association Between Teacher Educational Practices and Behaviors of Preschool and School-Aged Children*¹

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Abstract

Behavior problems and social skills are inversely related variables and can be influenced by teachers' educational practices. There is a lack of studies that simultaneously evaluate these variables, distinguishing types of behavior problems: internalizing, externalizing, and those with comorbidity of both internalizing and externalizing problems. The objective was to examine the associations between teachers' educational practices (positive and negative) and behaviors (social skills and behavior problems) of preschool and school-aged children, divided into groups of children with internalizing problems (G-Inter), externalizing problems (G-Exter), and combined internalizing and externalizing problems (G-Inter+Exter), compared to matched non-clinical groups for these problems. Furthermore, we sought to identify, through univariate and multivariate analyses, how the variables of interest were associated with the children's behavioral problems. A cross-sectional, correlational design was adopted. Participants included teachers of 262 children, distributed into groups differentiated by types of behavior problems and their non-problematic peers, using the Teacher's Report Form (TRF) as the criterion. Teachers responded about educational practices and children's behaviors. The data were processed using correlation analyses and univariate and multivariate associations ($p < 0.05$). It was found that positive practices, contextual variables, and children's social skills were associated, as well as positive associations between negative practices and behavior problems. For all three groups studied, social skills were negatively associated with

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1- Data Availability: The entire dataset supporting the results of this study was published in the article itself.

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behavior problems, and for the G-Exter and G-Inter+Exter groups, educational practices were also associated. These findings contribute to identifying risk and protective factors for specific problems, informing interventions aimed at children and teachers.

Keywords

Teacher-student interaction – Social skills – Behavior problems.

Introduction

The school is an important environment for the development and socialization of children, as it promotes academic learning and fosters social competence, although not all children succeed in achieving these acquisitions.

It is considered that children's behaviors are multidetermined, whether learning difficulties or social skills (Costa; Fleith, 2019), which are influenced by sociodemographic variables of the children, such as gender and schooling, and of their family members, such as schooling, income, and age (Ameen; Alarape; Adewole, 2019). The direct relationship between behavior problems and learning difficulties is well established (Zhang *et al.*, 2019), with consensus that these variables are inversely proportional to children's social skills (Fernandes *et al.*, 2018). Children with a history of poor academic performance tend to have low expectations regarding their achievements and academic progress (Fernandes *et al.*, 2018). On the other hand, the presence of combined risks has been associated with more negative outcomes in terms of child development, as reported in the prospective longitudinal study conducted by Roskam (2018) with preschool children referred for clinical treatment due to behavioral difficulties as assessed by parents.

Considering review studies on variables related to good academic performance, it is evident that the most positive outcomes occur in children with more self-regulation, more engagement with learning (Costa; Fleith, 2019; Festas *et al.*, 2018), fewer behavior problems (Festas *et al.*, 2018), and those who experience more positive educational practices from their parents, such as monitoring school activities (Gasparotto *et al.*, 2018).

In the school context, another relevant variable to consider is the way teachers interact with students, as this condition interferes with their behaviors (Roskam, 2018). Teachers' educational practices can be either positive or negative, involving interactions with students in communication, affection, and boundary-setting contexts (Bolsoni-Silva; Marturano; Loureiro, 2018), and depending on the quality and frequency of these practices, they can either promote or hinder children's development.

In turn, children's resources are associated with a lower likelihood of behavior problems, as highlighted by Hernández *et al.* (2018), based on an observational study that addressed emotional expressiveness in school and teacher reports on children's social difficulties and maladjustment at the end of the kindergarten year. Based on the identification of internalizing and externalizing behavior problems, they examined the role of emotional expressiveness in externalization and internalization. They found that positive emotional



expressiveness was associated with fewer conflicts in teacher-student interactions and also related to fewer externalizing behaviors and fewer depressive and anxiety symptoms. These findings show the bidirectional influence of children's and teachers' behaviors, which, according to Roskam (2018), is widely recognized in the literature.

Based on a meta-analysis study, Smith and Sheridan (2019) found that when teachers are able to stimulate parental participation in school activities and use positive communication practices, collaborative planning, and problem-solving strategies, there is greater socioemotional, behavioral, and academic development in students. Benbenishty *et al.* (2016) conducted an investigation using two databases (California Healthy Kids Survey – CHKS; California Department of Education) with the aim of verifying interrelationships between school climate, school violence, and academic performance, finding that improving academic performance requires reducing violence and improving the school climate. A positive classroom climate and encouragement for learning were found to be related to the teachers' educational practices, which have been poorly studied (Garcia *et al.*, 2016; Santiago *et al.*, 2016).

Regarding positive practices, Roksa *et al.* (2017) also found that the teacher's ability to give clear and organized instructions was strongly associated with students' academic motivation, study time, and classroom participation. Additionally, Fernandes *et al.* (2018) found that teachers' perceived support directed at students and students' social skills, as their resources, positively impacted their academic performance, demonstrating that positive practices related to offering support and attention maximized academic performance.

Gallo *et al.* (2022) found, with a sample of 703 elementary school students and 33 teachers, based on students' reports about their perceptions of teacher-student relationships and performance in mathematics and language, a bidirectional relationship between teachers' positive teaching practices and positive student performance outcomes. They discussed the relevance of encouraging goals for both students who exhibited externalizing behavior problems and those who exhibited internalizing behaviors, as the former tended to disrupt the classroom, while the latter tended to be socially aversive.

Jia, Mikami e Normand (2021) desenvolveram um estudo transversal com uma amostra de 213 crianças de 6 a 11 anos, com transtorno de déficit de atenção e hiperatividade (TDAH) tendo investigado práticas educativas de pais e de professores, habilidades sociais e problemas de comportamento. Verificaram associação de internalização e externalização com habilidades sociais pobres e, adicionalmente, verificaram que a qualidade positiva da interação professor-aluno reduziu as associações entre o comportamento internalizante e os baixos escores de habilidades sociais infantis. Os autores discutiram, contudo, que o delineamento transversal não permitiu estabelecer uma relação causal entre tais variáveis.

Mitchison *et al.* (2020) conducted a study aimed at evaluating the relationships between externalizing behavior problems and emotional dysregulation in preschoolers, using parents and teachers as informants who responded to clinical questionnaires. They reported a strong association between emotional dysregulation and symptoms of Oppositional Defiant Disorder (ODD) and concomitant conduct problems, also identifying that these difficulties were more frequent in boys.



Regarding externalizing problems and interactions with teachers, the longitudinal study by Husby *et al.* (2023) stands out, with children aged 4 to 12 years, conducted with two robust samples from Norway and the USA, countries with different educational systems. The study found that an increase in behavior problems reported by parents predicted an increase in teacher-student conflict in both countries, while behavior problems reported by teachers predicted an increase in student-teacher conflict in Norway more strongly than in the USA. They discussed that these associations remained stable from preschool to middle childhood, reiterating a reciprocal and bidirectional association between the conflictual teacher-student relationship and behavior problems.

A review of the literature shows that several studies have demonstrated the role of specific positive teacher practices in promoting students' academic and behavioral development: offering support, caring, being concerned about the student, demonstrating belief in the student's potential (Coelho; Dell'aglio, 2018); offering support and encouraging student involvement in academic tasks; expressing affection (Coelho; Dell'aglio, 2018); communicating (Benbenishty *et al.*, 2016); being affectionate and setting limits or rules in a positive way (Roskam, 2018). However, even though teachers strive to use positive practices in their interactions with students (Fernandes *et al.*, 2018), difficulties in dealing with student disobedience and aggression are often reported, leading to the use of imposition, punishment, and sanctions (Bolsoni-Silva *et al.*, 2018), threats, fights, reprimands, and the withdrawal of privileges (Bolsoni-Silva *et al.*, 2018), especially with boys and children with behavior problems.

It is also noted that teachers' educational practices and children's behavior have often been studied separately, focusing either on the teacher's or the student's behavior. Few studies have explored the associations of both positive and negative teacher educational practices alongside students' behaviors, considering behavioral difficulties, resources, and skills. Furthermore, as far as this review could ascertain, no studies have addressed teachers' educational practices in association with specific types of children's behavior problems, namely internalizing, externalizing, and combined problems.

This study addresses these gaps by proposing to study both positive and negative teacher educational practices in association with children's behaviors related to social skills and reports of behavior problems. The objective was to examine the associations between teacher educational practices (positive and negative) and behaviors (social skills and behavior problems) in preschool and school-aged children of both genders, distributed into groups of children with internalizing problems (G-Inter), externalizing problems (G-Exter), and combined internalizing and externalizing problems (G-Inter+Exter), compared to non-clinical groups matched for such problems. Furthermore, univariate and multivariate analyses were conducted to identify how the variables of interest related to teachers' educational practices are associated with the children's behavior problems.

Method

The study adopted a quantitative, cross-sectional, and associative design, with univariate and multivariate analyses, based on variables of interest, considering matched clinical and non-clinical groups, with control for bias related to the children's gender and schooling.



Ethical aspects

This project was approved by the Research Ethics Committee of the university where it was developed. It is part of a larger project titled “Evaluating and Promoting Positive Social Interactions and Preventing Behavior Problems” (CAAE no. 34642314.4.0000.5398). The participation of children and teachers occurred after formal consent, and children identified with internalizing, externalizing, or combined problems, as assessed by the Teacher’s Report Form (TRF – Child and Adolescent Behavior Inventories, Achenbach; Rescorla, 2001), were referred for psychological care if their families expressed interest. Informational materials were distributed at schools, and lectures and interventions were conducted according to the interest of the participating institutions.

Participants

A total of 142 teachers participated in the study, with 262 children. Based on the teachers’ evaluations, using the Teacher’s Report Form (TRF; Achenbach; Rescorla, 2001), the children were divided into three groups: Group Inter (G-Inter, with a total sample of 42 children, consisting of 21 clinical cases, defined by the presence of internalizing problems only, and 21 non-clinical children matched for gender and schooling); Group Exter (G-Exter, with a total sample of 112 children, consisting of 56 clinical cases, composed of children with externalizing problems only, and 56 non-clinical children matched for gender and schooling); and Group Inter and Exter (G-Inter+Exter, with a total sample of 108 children, consisting of 54 clinical cases, identified by the presence of both internalizing and externalizing problems simultaneously, and 54 non-clinical children matched for gender and schooling). Children with internalizing problems exhibited behaviors characteristic of anxiety, depression, and somatic complications, while those scoring on the externalizing scale exhibited behaviors such as hyperactivity, opposition, and aggression, as anticipated by the Teacher’s Report Form (TRF; Achenbach; Rescorla, 2001). The characteristics of the teachers and children included are described below for each group.

Characteristics of the teachers

Regarding the teachers, it was found that the vast majority were female (G-Inter – 97.6%; G-Exter – 92%; and G-Inter+Exter – 91.7%), with an average age of under 40 years (with the average age of G-Inter and G-Exter teachers being 39 years, and the average age of G-Inter+Exter teachers being 37 years), and on average, they worked in two classes and two shifts (G-Inter – 64.3%; G-Exter – 66.1%; and G-Inter+Exter – 66.7%). Regarding years of service, the majority reported having more than two years of experience (G-Inter – 95.4%; G-Exter – 88.4%; and G-Inter+Exter – 89.8%), with experience concentrated between 11 and 20 years (G-Inter – 40.5%; G-Exter – 41%; and G-Inter+Exter – 49%). The highest level of education for most was higher education (G-Inter – 97.6%; G-Exter – 96.4%; and G-Inter+Exter – 95.4%), and family income ranged from two to more than seven minimum wages, with an average of five minimum wages



for all groups, corresponding to Class C (Source: FGV-Social, 2018, available at <https://cps.fgv.br/qual-faixa-de-renda-familiar-das-classes>). The teachers reported knowing the evaluated children moderately well (G-Inter – 76.2%; G-Exter – 65.6%; and G-Inter+Exter – 65.7%) or very well (G-Inter – 11.9%; G-Exter – 15.2%; and G-Inter+Exter – 22.2%).

Characteristics of the children

Regarding the children's profile, the average age is 6.5 years ($SD = 2.3$) for G-Inter, 6.9 years ($SD = 2.5$) for G-Exter, and 6 years ($SD = 2.3$) for G-Inter+Exter. The groups consisted of preschoolers (G-Inter – 9; G-Exter – 21; and G-Inter+Exter – 20) and school-aged children (G-Inter – 12; G-Exter – 35; and G-Inter+Exter – 34). In G-Inter, there are eight boys (two preschoolers; 6 school-aged) and 13 girls (7 preschoolers; 6 school-aged); in G-Exter, there are 44 boys (16 preschoolers; 28 school-aged) and 12 girls (5 preschoolers; 7 school-aged); and in G-Inter+Exter, there are 47 boys (17 preschoolers; 30 school-aged) and seven girls (3 preschoolers; 4 school-aged).

Sampling procedure

The participants in this study were identified from a convenience sample of 142 teachers who assessed 262 children considered to have behavior problems and distributed into the G-Inter, G-Exter, and G-Inter+Exter groups, as well as 131 children with no behavior problems according to the teachers' assessments, in order to form matched non-clinical groups for each of the clinical group cases, considering the children's gender and schooling, to reduce confounding biases related to these variables.

Instruments

Social Skills Educational Interview Guide for Teachers (RE-HSE-Pr) (Bolsoni-Silva *et al.*, 2018): This instrument assesses the educational social skills of teachers through a semi-structured interview that evaluates the frequency and diversity of positive educational practices, contextual variables, negative educational practices, reports of behavior problems, and children's social skills. The instrument includes nine guiding questions in which the teacher is invited to discuss the behaviors in interaction with their student(s). The instrument allows the data to be grouped into three categories: communication (positive practices: conversation, asks questions), affection (positive practices: does things they enjoy, expresses affection), and boundaries (negative practices: expresses negative feelings, expresses opinions, sets boundaries, does things they dislike, identifies mistakes). Psychometric analyses have identified good qualities of the instrument in identifying positive and negative practices, differentiating children with and without behavior problems, and establishing cut-off points based on TRF through ROC curve analysis, which was also used for convergent analysis. In the present study, the total scores and classifications from the RE-HSE-Pr were used.

Teacher's Report Form (TRF – Child Behavior Checklist for Preschool and School-Aged Children), by Achenbach and Rescorla (2001): This instrument investigates, through



teacher reports, the frequency of 113 Likert-type responses indicative of behavior problems, allowing for the identification of clinical, borderline, and non-clinical scores for internalizing, externalizing, and total problems (Achenbach; Rescorla, 2001). For this study, the ASEBA software norms was used, as the TRF is in the validation process in Brazil. Bordin *et al.* (2013) state that this instrument is considered the gold standard for evaluating behavior problems and is one of the most widely used instruments in the world, with excellent psychometric properties.

Socially Skilled Responses Questionnaire for Teachers (QRSH-Pr) (Bolsoni-Silva; Loureiro, 2020): This instrument assesses the frequency of 23 responses on a Likert-type scale of social skills behaviors. The instrument, with a total alpha of 0.944, discriminated between children with and without behavior problems. The instrument has three factors, as follows: (a) Factor 1 – Sociability and Emotional Expressiveness (14 items); (b) Factor 2 – Social Initiative (5 items); (c) Factor 3 – Seeking Support (4 items), with good psychometric indicators. The QRSH-Pr presents a cut-off score for the total score, considering the TRF as the gold standard in a ROC curve study, with a score of 30 or lower indicating a deficit in social skills. For this study, the QRSH-Pr scores were used as a continuous variable, as well as their classification, categorically.

Sociodemographic Questionnaire: This questionnaire includes sociodemographic data of the children and teachers, which were used to compose and describe the children's groups regarding their schooling and gender. Regarding family income, information was gathered on the number of minimum wages, which were categorized into socioeconomic classes according to the official FGV Social (2018) classification. The information obtained from this questionnaire allowed for the description of each group profile, as presented in the participants.

Data collection procedures

After obtaining approval from the Municipal Education Department of a city in the interior of São Paulo, contact was made with the Early Childhood Education (EMEI) and Elementary Education (EMEF) schools, where the objectives of the present study were presented to the principal, the pedagogical coordinator, and the teachers. Upon agreeing to participate, they signed an Informed Consent Form. The EMEIs and EMEFs were selected considering the entire extent of the city, so data were collected from both peripheral and central schools, with efforts made to gather data from the same number of EMEIs and EMEFs across neighborhoods in order to strengthen sampling care.

Teachers from EMEIs and EMEFs were asked to identify two children from their classrooms: one they considered to have behavior problems and the other with no behavior problems. Consent from the children's families was requested, after which the teachers responded to the proposed instruments. It was ensured that each teacher evaluated the same number of children with and without problems, and the data collection was conducted face-to-face by an interviewer from the research team, trained for this task.



Data processing and analysis procedures

The sequence of data tabulation was as follows: (a) data entry into the ASEBA Software to code the children's behaviors based on the TRF; (b) organization of participants into groups according to whether they had behavior problems or not, with children having only internalizing problems included in G-Inter, children having only externalizing problems in G-Exter, and children with both internalizing and externalizing problems combined in G-Inter+Exter; (c) organization of the non-clinical group ensuring control for biases regarding the schooling and gender of the children included in the clinical groups; (d) tabulation of the RE-HSE-Pr and QRSH-Pr instruments, following their specific instructions; (e) analysis of the sample's normality (Kolmogorov-Smirnov Test), confirming the use of non-parametric methods; (f) correlation analysis for each group (Spearman's Test); (g) multivariate binary logistic regression analyses (Stepwise Backward method), conducted with variables identified from the correlations and univariate binary logistic analyses in each subgroup, checking the adequacy of the variables regarding collinearity (Tolerance and VIF), considering the sample size limitations and avoiding redundancy. For the analyses, a significance level of 5% was adopted, and correlations were identified as: weak (0-0.25), moderate (0.26-0.50), strong (0.51-0.75), or very strong (>0.75) (Maroco, 2014).

Results

The results section was organized according to the analyses conducted and the identified groups, namely: Internalization Group (G-Inter), Externalization Group (G-Exter), and Combined Internalization and Externalization Group (G-Inter+Exter).

The correlations between the variables of interest in the three groups, which were conducted separately for children with problems (clinical group) and matched children without problems (non-clinical group), identified positive relationships between variables related to the children, measured by different instruments (behavior problems and social skills), as well as a significant and direct relationship between behavior problems and behavioral complaints for the clinical G-Inter group ($\rho = 0.532$) and non-clinical groups (G-Inter – $\rho = 0.690$; G-Exter – $\rho = 0.397$; and G-Inter+Exter – $\rho = 0.424$).

Significant correlations were also found between the social skills of teachers and children for clinical groups (G-Inter – $\rho = 0.602$; G-Exter – $\rho = 0.284$; and G-Inter+Exter – $\rho = 0.397$), as well as between positive practices and those aimed at various situations, academic settings, and contextual variables for clinical groups (G-Inter – $\rho = 0.672$; G-Exter – $\rho = 0.520$; and G-Inter+Exter – $\rho = 0.444$) and non-clinical groups (G-Exter – $\rho = 0.513$; and G-Inter+Exter – $\rho = 0.605$).

Regarding negative practices, significant direct relationships were identified with behavior complaints as assessed by the RE-HSE-Pr for clinical groups (G-Exter – $\rho = 0.512$; and G-Inter+Exter – $\rho = 0.451$) and non-clinical groups (G-Exter – $\rho = 0.492$; and G-Inter+Exter – $\rho = 0.473$), and with behavior problems assessed by the TRF for non-clinical groups (G-Inter – $\rho = 0.525$).



Tables 1 and 2 present, respectively, the univariate and multivariate analyses in binary regression, with only the univariate analysis models showing significance and the final models of the multivariate analyses presented.

Table 1 – Univariate analysis (binary logistic regression) with the dependent variable being the presence or absence of exclusively internalizing problems (G-Inter), exclusively externalizing problems (G-Exter), and combined problems (G-Inter+Exter)

Presence of internalizing problems – G-Inter (n=42)						
	B	Exp(B)	p	95% CI	R ² Cox & Snell	R ² Nagelkerke
Total Negative (Categorical)*	-1,96	0,140	0,023	0,026-0,764	0,14	0,19
Total Behavioral Complaints - RE-HSE-Pr (Categorical)*	-2,36	0,094	0,001	0,022-0,398	0,25	0,34
Social Skills - Total QRSH (Categorical)*	-3,28	0,038	0,003	0,004-0,334	0,30	0,40
Presence of externalizing problems – G-Exter (n=112)						
	B	Exp(B)	p	95% CI	R ² Cox & Snell	R ² Nagelkerke
Behavioral Complaints - Total - RE-HSE-Pr (Score)*	0.194	1.214	< 0.001	1.123-1.311	0.26	0.34
Behavioral Complaints - Total - RE-HSE-Pr (Category)	-2.234	0.107	< 0.001	0.041-0.278	0.21	0.28
Negative Practice - Total - RE-HSE-Pr (Score)*	0.407	1.503	< 0.001	1.217-1.855	0.17	0.23
Negative Practice - Total - RE-HSE-Pr (Categorical)	-1.741	0.175	< 0.001	0.074-0.416	0.15	0.20
Positive Practice - Various and Academic Situations - RE-HSE-Pr (Score)	-0.193	0.824	0.047	0.681-0.997	0.04	0.05
Positive Practice - Various and Academic Situations - RE-HSE-Pr 1 (Categorical)	-1.466	0.231	0.015	0.071-0.753	0.06	0.08
Context Communication - RE-HSE-Pr (Score)*	-0.325	0.722	0.042	0.528-0.988	0.04	0.05
Context Affection - RE-HSE-Pr (Score)*	0.239	0.592	0.049	0.351-0.998	0.04	0.05
Social Skills - QRSH (Scores) - F11	-0.296	0.744	< 0.001	0.662-0.836	0.32	0.42
Social Skills - QRSH (Scores) - F2	-0.227	0.797	0.007	0.677-0.939	0.07	0.09
Social Skills - Total - QRSH (Scores)*	-0.145	0.865	< 0.001	0.811-0.924	0.22	0.30
Social Skills - Total - QRSH (Categorical)	-1.812	0.163	0.001	0.056-0.474	0.11	0.15
Presence of internalizing + externalizing problems – G-Inter+Exter (n=108)						
	B	Exp(B)	p	95% CI	R ² Cox & Snell	R ² Nagelkerke
Behavioral Complaints - Total - RE-HSE-Pr (Category)*	-1.823	0.161	< 0.001	0.06-0.41	0.15	0.20
Negative Practice Total - RE-HSE-Pr (Score)	-1.327	0.265	0.002	0.12-0.61	0.09	0.12
Positive Practice Total – RE-HSE-Pr (Score)*	0.118	1.125	0.034	1.01-1.25	0.04	0.06
Social Skills - Communication - RE-HSE-Pr (Score)	-0.519	0.595	0.001	0.442-0.800	0.12	0.17
Social Skills - Total QRSH (Score) - F1	-0.401	0.670	< 0.001	0.58-0.77	0.53	0.71
Social Skills - Total QRSH (Score) - F2	-0.492	0.611	< 0.001	0.51-0.74	0.32	0.42
Social Skills - Total QRSH (Score) - F3	-0.332	0.718	0.003	0.59-0.88	0.11	0.14
Social Skills - Total - QRSH (Categorical)*	-3.129	0.044	< 0.001	0.02-0.12	0.36	0.48

* Variables Entered into the Multivariate Model.

Source: Author's own elaboration.



In Table 1, the univariate analyses are presented, considering the group configuration based on the presence of exclusive internalizing problems, exclusive externalizing problems, or combined internalizing and externalizing problems as dependent variables. In G-Inter, the total negative (sum of negative practices and behavior problems), behavioral complaints, and social skills were identified as associated with these problems. The univariate regression analyses for G-Exter showed that externalizing behavior problems were associated with a deficit in positive practices (communication, various and academic situations, and affection), excessive negative practices, and excessive behavioral complaints reported. In G-Inter+Exter, it was found that combined problems were associated with positive practices (total and communication), negative practices, behavioral complaints, and social skill.

Table 2 – Multivariate analysis with the final set of included variables (binary logistic regression), with the dependent variable being the presence or absence of exclusively internalizing problems (G-Inter), exclusively externalizing problems (G-Exter), and combined problems (G-Inter+Exter)

Presence of internalizing problems – G-Inter (n=42)						
	B	Exp(B)	p	95% CI	R ² Cox & Snell	R ² Nagelkerke
Social Skills - Total QRSH (Categorical)	-3.283	0.038	0.003	0.004-0.334	0.30	0.41
Presence of externalizing problems – G-Exter (n=112)						
	B	Exp(B)	p	95% CI	R ² Cox & Snell	R ² Nagelkerke
Negative Practice – RE-HSE-Pr (Score)	0.316	1.371	0.006	1.094-1.718	0.37	0.49
Social Skills - QRSH-Pr (Scores) - F1	-0.259	0.772	0.001	0.690-0.864		
Presence of internalizing and externalizing problems – G-Inter+Exter (n=108)						
	B	Exp(B)	p	95% CI	R ² Cox & Snell	R ² Nagelkerke
Total Negative Practice - RE-HSE-Pr (Score)	1.135	0.321	0.036	7.23-61.59		
Social Skills - Total QRSH (Categorical)	-3.050	21.114	< 0.001	0.11-0.93	0.39	0.51

Source: Author's own elaboration.

Among the independent variables, social skills presence (categorical variable) stood out for fewer internalizing problems in G-Inter (with variance between 30% and 41%), a variable that also composed the final set of variables for G-Inter+Exter in the presence of negative practices. For the group with combined problems, the presence of higher scores for negative educational practices and fewer social skills were associated with more internalizing and externalizing problems (variance between 37% and 49%). Regarding G-Exter, the final set of variables showed that more negative practices in the presence of lower social skills scores were associated with the presence of externalizing problems (variance between 39% and 51%).



Discussion

This study aimed to examine the associations between teacher educational practices (positive and negative) and children's behaviors (social skills and behavior problems) of both genders, preschool and school-aged children, comparing groups of children differentiated by types of behavioral difficulties to groups without behavioral difficulties/non-clinical groups, based on teacher evaluations.

The results demonstrated that children's social skills, with low frequency, were associated with the presence of internalizing, externalizing, and combined behavior problems, which is consistent with previous studies (Elias; Amaral, 2016; Fernandes *et al.*, 2018; Jia; Mikami; Normand, 2021; Mitchison *et al.*, 2020). Emotional expressiveness, as evaluated by Hernández *et al.* (2018), resembles the social skills studied in this research, with the present study's data reiterating the findings of the cited study by showing the association between social skills and the presence of indicators of internalization and externalization in preschool and school-aged children. Thus, it is argued that interventions promoting children's social skills are likely to help reduce behavior problems, whether internalizing, externalizing, or combined problems.

Another relevant point concerns the identification of associations between positive practices, contextual variables, and social skills, as well as negative practices and behavior problems, in groups with exclusively externalizing problems and combined problems. In the G-Inter+Exter group, negative practices were also negatively associated with children's social skills, showing a possible influence on cases with more severe behavior problems. Positive and negative practices were also identified as being associated with behavior problems in the univariate and/or multivariate analyses in these two groups, demonstrating the relevance of interventions with teachers to foster the learning of positive educational practices, thereby reducing the need for negative practices.

Fernandes *et al.* (2018) and Goodwin and Long (2023) studies, although not investigating the same teacher educational practices, also found the role of such positive interactions (social support and cultural responsiveness, respectively) in reducing academic difficulties (Fernandes *et al.*, 2018) and behavior problems (Goodwin; Long, 2023). Thus, it is considered essential to encourage teachers to use these educational social skills with children who have greater interpersonal and academic difficulties, to motivate the student, direct study, and offer support.

Regarding behaviors associated with positive practices, which are identified in the literature and resemble the educational practices addressed in this study, we can mention: praising (Bolsoni-Silva *et al.*, 2018), greeting (Bolsoni-Silva *et al.*, 2018), playing (Bolsoni-Silva *et al.*, 2018), smiling/showing affection (Coelho; Dell'aglio, 2018), offering support, encouraging the student's potential, encouraging task completion (Benbenishty *et al.*, 2016; Coelho; Dell'aglio, 2018; Fernandes *et al.*, 2018; Squassoni; Matsukura; Panúncio-Pinto, 2016); encouraging goals (Gallo *et al.*, 2022); communicating (Benbenishty *et al.*, 2016); setting limits or rules positively (Roskam, 2018); giving clear instructions (Roskam, 2018); and showing responsiveness to cultural inclusions (Goodwin; Long, 2023).



The early identification of behavior problems can help promote interventions that minimize negative outcomes (Galán *et al.*, 2020), especially when there are combined risks, such as the presence of both internalizing and externalizing problems, or when these occur in more than one environment, such as at home and at school (Roskam, 2018).

In analyzing the three specific clinical groups, it was found that children's social skills and both positive and negative educational practices of teachers were significantly associated with behavior problems in the groups with externalizing and combined problems, and the absence of children's social skills was associated with internalizing behavior problems. The latter, in turn, was the least reported by teachers compared to externalizing or combined problems, as found in the study by Goodwin and Long (2023).

It can be assumed that for children with internalizing problems, conducting interventions in children's social skills, regardless of the environment in which they occur, could be sufficient to improve their difficulties, as positive and negative practices from teachers do not seem to contribute to such difficulties. In this reasoning, it may be that as children become more skilled, teachers react more positively to them, without direct training regarding their practices. Intervening with these children may increase the adherence and reach of the intervention, as well as benefit them in other development contexts.

For children in groups with externalizing or combined problems, however, based on the data analyzed in this study, intervention strategies for the development of children's social skills should be associated with actions that promote positive educational practices by teachers, reducing the use of negative practices. This combination of interventions would be more effective when addressing children's mental health concerns.

Although this study did not focus on learning difficulties, it is known that there is a direct relationship with behavior problems and an indirect relationship with social skills (Costa; Fleith, 2019; Festas *et al.*, 2018). Therefore, it is believed that by identifying critical variables for the occurrence and maintenance of behavior problems, in the fields of social skills and educational practices, and intervening in this direction, one can also help improve children's academic repertoire. This hypothesis is supported by findings in the literature, such as the study by Smith and Sheridan (2019), who identified that teachers' positive practices, planning, and problem-solving improved students' socioemotional and academic development. Thus, the bidirectionality of the teacher-student interaction, also observed by other researchers (Gallo *et al.*, 2022; Hernández *et al.*, 2018; Husby *et al.*, 2023), is emphasized. The results of these studies suggest a bidirectional relationship between conflicts between teachers and students and the presence of behavioral problems complaints and negative practices (Gallo *et al.*, 2022; Hernández *et al.*, 2018; Husby *et al.*, 2023), which can hinder child development (Husby *et al.*, 2023).

It is important to highlight that the school is not the only environment responsible for promoting the social and academic development of the child. The role of parental practices is well-known (Fuentes-Balderrama *et al.*, 2020), as well as the importance of monitoring school activities by family members (Gasparotto *et al.*, 2018). However, the interactions established between the teacher and the family help in the development of the student (Smith; Sheridan, 2019) and should be part of the teacher's professional role.



This study, in discussion with the data from the literature, points out that teacher-student interactions can both collaborate in promoting students' social skills (Goodwin; Long, 2023; Smith; Sheridan, 2019), as well as influence behavior problems (Benbenishty *et al.*, 2016). It is also highlighted that encouraging a positive classroom climate and motivating students to learn is part of the teacher's repertoire of positive practices, which, according to some researchers (Garcia *et al.*, 2016; Santiago *et al.*, 2016), has also been little studied.

The behaviors that most trouble teachers are disobedience and aggression from students (Araujo; Sperb, 2009), which are present in the G-Exter and G-Inter+Exter groups. In response to these behaviors, teachers tend to resort to imposition, punishments, and sanctions (Araujo; Sperb, 2009), threats, fights, calling the school administration, punishing/removing privileges (Bolsoni-Silva *et al.*, 2018), which was also demonstrated in this study. It is believed that teachers, when establishing limits (Bolsoni-Silva *et al.*, 2018), tend to use positive practices, but when they do not obtain the desired obedience, they resort to negative practices, which seems to happen with children in the G-Exter and G-Inter+Exter groups, inadvertently exacerbating the occurrence of such problem behaviors. It is noteworthy that such practices are not evident in internalizing problems, showing that this group of children possibly does not cause discomfort to the teacher, and consequently does not require the teacher's intervention to regulate this behavior. Children with such difficulties may go unnoticed, which can increase the risk to their development.

Final considerations

This quantitative and cross-sectional study, which adopted correlational and univariate and multivariate association analyses, presented specific data for groups of children with differentiated behavior problems (G-Inter, G-Exter, G-Inter+Exter). Distinct patterns of teacher-student interactions were identified according to the group being investigated, with evidence of bidirectionality in these interactions, indicating the need for differentiated interventions based on the children's profile. A strong point of this study was the methodological care in identifying groups according to the type of problem, as well as matching non-clinical groups by gender and schooling, reducing confounding variables, in addition to using validated instruments.

Limitations include: the cross-sectional design, which does not allow for establishing causality between the variables of interest; relying on teachers as the only informants; the absence of observational measures that could reduce reporting bias; the sample being from a single location, with a small number of participants, which limited specific analyses for boys and girls and for educational levels, variables controlled to minimize bias. Additionally, academic variables were not investigated, which are highly relevant in understanding the interactions established in the academic context. These gaps could be addressed by future studies with diverse designs.



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