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Behavior problems, anxiety, and social skills among kindergarteners

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Abstract

This study presents the indicators of behavior, anxiety and social skills of 38 kindergarteners (52.6% girls, mean age 5.34 years; SD = 0.48) enrolled in a municipal school located in the southeastern region of Brazil. The children's parents/caregivers (86.4% mothers) and teachers completed the instruments: Strengths and Difficulties Questionnaire (SDQ), Preschool Anxiety Scale (PAS) and Preschool Kindergarten Behavior Scale (PKBS-BR). Data were analyzed using descriptive and inferential statistics. Most children were classified in the non-clinical range for behavior problems and anxiety. The perceptions of the children's parents/caregivers and teachers diverged, with guardians more frequently identifying deficits in Total Anxiety, Obsessive-Compulsive Disorders, Fear of Physical Harm and Separation Anxiety (PAS); External Problems and Hyperactivity (SDQ); and Internalizing and Externalizing Problems (PKBS). A correlation was found between anxiety, behavior problems and social skills, reinforcing that there is interdependence between aspects of social-emotional development. These findings can support interventions at schools intended to promote prosocial behaviors.

Keywords: anxiety; social behavior; social skills; prevention; children.

PROBLEMAS DE COMPORTAMENTO, ANSIEDADE E HABILIDADES SOCIAIS DE CRIANÇAS PRÉ-ESCOLARES

Resumo

Este estudo descreveu indicadores comportamentais, ansiedade e habilidades sociais de 38 pré-escolares (52,6% meninas, média de idade de 5,34; *DP* = 0,48) matriculados em uma escola municipal, localizada na região sudeste do Brasil. Os responsáveis (86,4% mães) e professoras, responderam aos instrumentos: Questionário de Capacidades e Dificuldades (SDQ), Escala de Ansiedade Pré-Escolar (PAS) e Escala de Comportamentos Sociais de Pré-Escolares (PKBS-BR). Os dados foram analisados por estatística descritiva e inferencial. A maioria das crianças foi referida na faixa normal para problemas comportamentais e ansiedade. Responsáveis e professoras divergiram, com os primeiros atribuindo mais déficits em Ansiedade Total, Perturbações Obsessivo-Compulsivas, Medo de Dano Físico e Ansiedade de Separação (PAS); Problemas Externalizantes e Hiperatividade (SDQ); e Problemas Internalizantes e Externalizantes (PKBS). Verificou-se correlação entre ansiedade, problemas comportamentais e habilidades sociais, reforçando a interdependência entre aspectos do desenvolvimento socioemocional. Esses achados podem subsidiar propostas de intervenção para promoção de comportamentos pró-sociais na escola.

Palavras-chave: ansiedade; comportamento social; habilidades sociais; prevenção; criança.

PROBLEMAS DE CONDUCTA, ANSIEDAD Y HABILIDADES SOCIALES DE LOS NIÑOS PREESCOLARES

Resumen

Este estudio describió indicadores conductuales, ansiedad y habilidades sociales de 38 preescolares (52,6% niñas, promedio de edad de 5,34, DP = 0,48), matriculados en una escuela municipal, ubicada en la región sudeste de Brasil. Los responsables (86,4% madres) y profesoras, respondieron a los instrumentos: Cuestionario de Capacidades y Dificultades (SDQ), Escala de Ansiedad Pre-Escolar (PAS) y Escala de Conductas Sociales de Pre-Escolares (PKBS-BR). Los datos fueron analizados por estadística descriptiva e inferencial. La mayoría de los niños fueron referidos en el rango normal para problemas de comportamiento y ansiedad. Los responsables y las profesoras divergieron, con los primeros asignando más déficits en Ansiedad Total, Trastornos obsesivos-compulsivos, miedos de daño físico y ansiedad de separación (PAS); Problemas Externos y Hiperactividad (SDQ); y Problemas Internalizantes y Externalizadores (PKBS). Se verificó correlación entre ansiedad, problemas conductuales y habilidades sociales, reforzando la interdependencia entre aspectos del desarrollo socioemocional. Estos hallazgos pueden subsidiar propuestas de intervención para promover comportamientos pro-sociales en la escuela.

Palabras clave: ansiedad; conducta social; habilidades sociales; prevención; niños.

1. Introduction

Stigma can be defined as a social phenomenon that affects a group of people who Researchers in child development have drawn attention to the importance of the first years of life, called Early Childhood (from zero to six years of age), which is a condiuctive period to the development of brain circuits based on environmental experiences (NCPI, 2016). Positive experiences in early childhood, that is, positive characteristics of contexts in which children establish protective and supportive relationships, strengthen developing biological systems, providing the basis for solid brain architecture and the achievement of the ability to learn and countless skills (Shonkoff et al., 2012).

Self-regulatory processes begin at this stage of life and are extended throughout the development of individuals (Diamond, 2013). In this process, a

child's primary caregivers play an important role, acting as co-regulators and allowing the child to achieve self-regulation (Linhares & Martins, 2015). Self-regulation enables children to adapt and adjust through continuous monitoring, regulation, and control of motivations, emotions, and cognition (NCPI, 2016). An increase in self-regulatory behaviors is observed in the kindergarten period (Diamond, 2013; NCPI, 2016), that is, in behaviors individuals use to adjust emotions when facing positive and negative internal or external demands (Linhares & Martins, 2015).

The self-regulatory process involves the acquisition of executive functions that enable an individual to consciously control thoughts, behaviors and emotions using inhibitory control, working memory, and mental flexibility (Diamond, 2013; NCPI, 2016). Inhibitory control is of special interest in this study because it involves the notion of self-control, or behavioral control ability, even in the presence of stimuli that encourage impulsive behaviors (NCPI, 2016).

According to Olson and Lunkenheimer (2009), failure in these self-regulatory processes can be considered a key mechanism to understanding child behavior problems. Studies have shown the importance of assessing executive functions considering their association with kindergarteners' behavior patterns (Dias, Maioli, Santos, & Mecca, 2018). Such an assessment might provide important data to support interventions intended to prevent the development of emotional and behavior problems (Dias et al., 2018; Anticich, Barrett, Silverman, Lacherez, & Gillies, 2013; Pahl & Barrett, 2010; Pavoski, Toni, Batista, & Ignachewski, 2018).

Behavior problems are considered to be behavioral deficits or excesses that prevent a child from accessing learning, while learning facilitates the developmental process (Bolsoni-Silva, Marturano, Pereira, & Manfrinato, 2006). According to Achenbach and Edelbrock (1983), behavior problems fall into two large categories: 1. externalizing problems, which are mainly behaviors directed outward toward other people, such as physical aggression, challenging behaviors, and antisocial behaviors; and 2. internalizing problems, which are predominantly behaviors directed toward oneself, such as isolation, anxiety and social withdrawal.

Anxiety symptoms are one example of internalizing problems. Almeida and Viana (2013) state that, even though there is little empirical evidence of anxiety symptoms among kindergarteners, there are behavioral patterns characteristic of anxiety at relevant clinical levels manifesting early among children. One study as-

sessing anxiety disorder in a kindergarten population reports that the progression of anxiety problems was statistically significant; anxiety more frequently emerges when children experience parental separation or fear something bad or negative may happen. Among younger children (aged between 3 and 5), problems related to parental separation and fear of physical harm prevailed, while social anxiety emerged around the age of six (Almeida & Viana, 2013).

Acquiring greater understanding of behavior problems and symptoms of anxiety among kindergarteners demands further research from a socioemotional development perspective, so that interventions promoting and protecting child development are present in contexts in which children are found, as is the case of schools. Behavior problems, anxiety symptoms and social skills are interdependent components of socioemotional development. As such, studies should investigate these variables together (Santos & Celeri, 2018). For example, poor social skills are related to behavior problems and the literature shows that the presence of socially skillful behaviors are a protective factor against behavior problems, contributing to improved interactions among peers and with co-regulators (parents and teachers) (Bolsoni-Silva et al., 2006).

Based on the preceding discussion, a descriptive, correlational and comparative study was conducted to describe behavioral indicators of anxiety and social skills among kindergarteners derived from the reports of parents/caregivers and teachers. Specifically, the objective was to verify the relationship between these variables and to compare the perceptions of parents/caregivers and teachers. The hypotheses established in this study were: 1. there is a relationship between behavior, social skills, and anxiety among kindergarteners; and 2. there are differences between the perceptions of parents/caregivers and teachers in regard to the kindergarteners' behavioral characteristics and symptoms of anxiety.

2. Method

2.1 Participants

The sample was composed of children and their respective parents and teachers from a municipal early childhood school located in the metropolitan region of Grande Vitória, ES, in the southeast of Brazil. This school was selected according to accessibility and convenience criteria, after authorization was provided

by the school's principal and the City Department of Education. The children were recruited through a random draw. Two of the four kindergarten classrooms were selected through a simple draw performed in the presence of the school's principal. Children regularly enrolled in both classes (*n*=39) were included in the draw. However, those who presented a neurodevelopment problem that restricted participation in school activities, according to the teaching staff, were excluded; only one child presented such a condition.

A total of 38 children, both girls and boys (52.6% girls), aged between 5 and 6, (*Mean*=5.34; *SD*=0.48) participated in the study. The parents and/or caregivers who consented to participate in the study were included in the sample. This sample was composed of mothers (86.4%), fathers (9.1%), and grandmothers (4.5%), aged between 24 and 61 years old (*Mean*=36.86; *SD*=10.70); most were women (90.9%) and married (59.1%). The parents' education ranged from primary school (18.2%) to graduate studies (9.1%); high school was the most frequent educational level (36.4%) completed. Four people, on average, lived in the same home as the child (*SD*=1.19). The teachers of the two classes selected were also recruited as informants and, like the parents, completed the questionnaires that concerned the children's characteristics.

2.2 Instruments

Anxiety symptoms and behavioral indicators were verified through the reports of caregivers/parents and teachers who completed the following instruments:

- *Preschool Anxiety Scale [PAS]* (Spence, Rapee, MacDonald, & Ingram, 2001): this scale assesses anxiety among preschoolers. The caregiver version is composed of 28 items, while the teacher version is composed of 22 items; both versions use a five-point Likert scale in which 0=never and 4=always. The final score provides an overall measure of anxiety and specific symptoms of subtypes of anxiety disorders, namely: Generalized Anxiety Disorder, Social Anxiety Disorder, Separation Anxiety, Obsessive-Compulsive Disorder, and Fear of Physical Harm. There are neither studies adapting this scale to the Brazilian context and language, nor validation studies conducted for the population of Brazilian children. The Portuguese version adapted by Almeida & Viana (2013), which presented satisfactory internal consisten-

cy and external validity among Portuguese preschoolers, was adopted in this study.

- *Strengths and Difficulties Questionnaire [SDQ]* (Goodman, 1997): the SDQ assesses the behavioral characteristics of children from 4 to 17 years old through 25 items: 10 items address strengths; 14 items address difficulties; and one item is neutral. The items compose five subscales named: Emotional symptoms, Conduct problems, Hyperactivity, Peer relationship, and Prosocial behavior. Scores range from 0 to 10 on each subscale and the total score concerning difficulties came from totaling the scores obtained on all the subscales, except sociability. Answer alternatives for the scale's items are: false, somewhat true, and true. The SDQ psychometric properties are reported by Saur and Loureiro (2012), after they reviewed Brazilian studies reporting discriminative validity indicators with significant differences ($p<0.001$) in the mean total score of clinical and non-clinical samples. The internal consistency index was obtained for the total scale of behavior problems; Cronbach's alphas were close to 0.80 (Saur & Loureiro, 2012). These findings suggest that the SDQ presents appropriate psychometric properties for the Brazilian population (Saur & Loureiro, 2012; Woerner et al., 2004).
- *Preschool Kindergarten Behavior Scale [PKBS]* (Merrell, 2002): the PKBS-BR is an American instrument intended to assess social skills and behavior problems among kindergarteners that was validated for the Brazilian context by Dias, Freitas, Del Prette, and Del Prette (2011). It assesses the frequency of social skills through three subscales (Social Cooperation, Social Interaction, and Social Independence) and problem behaviors (Internalizing and Externalizing Problems). Answers are provided according to a four-point Likert scale ranging from 0 to 3. The validation study reports satisfactory internal consistency, between 0.79 and 0.95 (Dias et al., 2011).

A questionnaire addressing the sociodemographic data of parents and caregivers, such as age, sex and education, was applied to characterize the sample.

2.3 Procedure

This study was initiated after authorization was provided by the Institutional Review Board (opinion report 2,104,440). After the classes were selected and

inclusion and exclusion criteria were applied, the parents received invitations to participate in a meeting at the school to present the study's objective. The parents who attended the meeting, as well as the teachers of these classes, were consulted about their interest to participate in the study, signing free and informed consent forms. They completed the instruments measuring anxiety (PAS), behavioral characteristics (SDQ) and social skills (PKBS-BR). Free and informed consent forms, along with the instruments, were sent to the parents who did not attend the meeting, with instructions on how to complete and return the questionnaires.

Data analysis included the correction of the instruments according to the authors' instructions, and descriptive statistical analysis (frequency, proportion, mean, and standard deviation). This analysis allowed characterizing the sample in terms of mean indicators of anxiety (PAS), behavior problems (SDQ) and social skills (PKBS-BR), as well as clinical and non-clinical indicators (PAS and SDQ). Inferential statistical analysis was used to verify significant differences between the perceptions of teachers and guardians in regard to the study variables (anxiety, behavior problems, social skills). For that, the paired t-test was applied when the sample was assumed to be normal, while the nonparametric Wilcoxon test was used when this assumption was not satisfied (Siegel & Castellan, 2006).

To verify the normality of the sample, the Shapiro test was used. When data were considered to be normal, Pearson's correlation test was employed and when data did not present a normal distribution, Spearman's test was used. Correlation analyses were performed to verify potential associations between anxiety, behavior problems, and social skills. Level of significance was established at $p \leq 0.05$. Correlations were considered statistically significant when $p < 0.05$. The following classification was adopted to establish the intensity of correlations, p-value (+ or -): (a) very strong correlation (0.9 to 1.00); (b) strong correlation (0.70 to 0.89); (c) moderate correlation (0.40 to 0.69); and (d) weak correlation (0.20 to 0.39) (Callegari-Jacques, 2003).

Because not all parents returned the questionnaires, the data analyzed refer to the perceptions of 23 parents in regard to their children. Only the measure of behavioral characteristics (SDQ) of one of the children was discarded because it was not fully completed. This variation in the sample size was taken into account in data analysis.

3. Results

Table 3.1 presents the mean scores obtained for each domain concerning behavior problems, prosocial behavior, and anxiety, according to the perceptions of caregivers/parents and teachers, as well as the children's classification into clinical and non-clinical groups. The children's behavioral problems (Total Difficulties), measured using the SDQ, according to the perceptions of the guardians and teachers, obtained means equal to 11.3 (SD=4.6) and 8.6 (SD=5.9), respectively.

The analysis, according to behavioral domains, indicated that the greatest difficulties were related to Hyperactivity, as perceived by both the guardians (M=4.7; SD=2.1) and teachers (M=3.1; SD=2.7). Classification in the behavioral domains reveals that most children were assigned to the non-clinical group by both their guardians and teachers. Most of the children in the clinical group presented Conduct Problems and Hyperactivity (guardians) and Prosocial Behavioral (teachers) (Table 3.1).

Table 3.1. Classification of groups in terms of behavioral problems, prosocial behavior, and anxiety according to the perceptions of guardians and teachers.

	Guardians (n=23)					Teachers (n=37)				
	M	SD	Non-clinical group f(%)	Borderline f(%)	Clinical group f(%)	M	DP	Non-clinical group f(%)	Borderline f(%)	Clinical group f(%)
Behavioral Problems and Prosocial Behavior										
Total Difficulties	11.3	4.6	17(73.9)	2(8.7)	4(17.4)	8.6	5.9	25(67.5)	8(21.6)	4(10.8)
Emotional symptoms	2.4	1.7	17(74.0)	3(13.0)	3(13.0)	1.9	1.6	33(89.1)	4(10.9)	0
Conduct problems	2.3	1.6	15(65.2)	2(8.7)	6(26.1)	1.5	2.1	33(89.2)	0	4(10.8)
Hyperactivity	4.7	2.1	17(74.0)	1(4.3)	5(21.7)	3.1	2.7	30(81.8)	3(8.1)	4(10.8)
Peer relationship problems	1.9	1.4	17(74.0)	3(13.0)	3(13.0)	2.0	1.9	28(75.6)	5(13.5)	4(10.8)
Prosocial behavior	7.5	2.2	19(82.6)	2(8.7)	2(8.7)	6.8	2.7	26(70.2)	4(10.8)	7(18.9)
Anxiety										
Total anxiety	27.9	14.4	18(78.2)	n/a	5(21.8)	11.5	9.7	31(81.6)	n/a	7(18.4)
Generalized anxiety	4.6	3.2	18(78.2)	n/a	5(21.8)	2.7	3.4	29(76.3)	n/a	9(23.7)
Social anxiety	6.5	5.3	17(73.9)	n/a	6(26.1)	4.4	4.1	32(84.2)	n/a	6(15.8)
Obsessive-compulsive disorders	2.9	2.8	21(91.3)	n/a	2(8.7)	0.7	1.5	33(86.9)	n/a	5(13.1)
Fear of physical harm	7.1	4.5	20(86.9)	n/a	3(13.1)	0.2	0.9	35(92.1)	n/a	3(7.9)
Separation anxiety	6.8	3.8	16(69.6)	n/a	7(30.4)	3.3	3.6	31(81.6)	n/a	7(18.4)

Note: Group classification that resulted from the cutoff points established for each instrument (SDQ and PAS). n=number of children in the sample; M=mean; SD=standard deviation; n/a (applicable).

The perceptions of the guardians and teachers regarding total anxiety obtained means equal to 27.9 (SD=14.4) and 11.5 (SD=9.7), respectively (Table 3.1). Analysis of the anxiety domains indicated that the highest means, according to the guardians, were related to the following: Fear of physical harm (M=7.1; SD=4.5), Separation anxiety (M=6.8; SD=3.8) and Social anxiety (M=6.5; SD=5.3). The symp-

toms with the highest means, according to the perceptions of teachers were: Social anxiety (*M*=4.4; *SD*=4.1) and Separation anxiety (*M*=3.3; *SD*=3.6).

The reports of the guardians and teachers regarding anxiety symptoms classified most of the children into the non-clinical group in all the domains. Analysis of clinical classifications indicated higher percentages in the domains concerning Separation anxiety and Social anxiety (guardians) and Generalized anxiety, Total anxiety, and Separation anxiety (teachers) (Table 3.1).

Table 3.2 presents the differences between the reports of guardians and teachers in regard to anxiety symptoms (PAS) and behavioral indicators (SDQ and PKBS-BR). Note that the scores that resulted from the perception of parents/caregivers reached significantly higher means for Total Anxiety (*p*=0.000), Obsessive-Compulsive Disorders (*p*=0.008), Fear of Physical Harm (*p*=0.000), and Separation Anxiety (*p*=0.001). This difference was also found in regard to behavioral aspects (SDQ); the guardians more frequently reported Externalizing Problems (*p*=0.036) and Hyperactivity (*p*=0.036).

Table 3.2. Mean values of variables: anxiety, behavior problems, and Prosocial behaviors, and Social skills based on the perceptions of guardians and teachers.

	Test (Mean)	Guardians		Teachers		p-value
		M	SD	M	SD	
Anxiety						
Total anxiety	Paired t-test	27.9	14.4	11.5	9.7	*0.000
Generalized anxiety	Paired t-test	4.6	3.2	2.7	3.4	0.096
Social anxiety	Paired t-test	6.52	5.3	4.4	4.1	0.066
Obsessive-compulsive disorders	Paired t-test	2.9	2.8	0.7	1.5	*0.008
Fear of physical harm	Paired t-test	7.1	4.5	0.2	0.9	*0.000
Separation anxiety	Paired t-test	6.8	3.8	3.3	3.6	*0.001
Behavioral Problems and Prosocial Behavior						
Total Difficulties	Paired t-test	11.3	4.6	8.6	5.9	0.099
Internalizing problems	Wilcoxo	4.3	2.2	4.0	2.7	0.320
Externalizing problems	Paired t-test	7.3	3.3	4.6	4.3	*0.036
Emotional symptoms	Paired t-test	2.4	1.7	1.9	1.6	0.565
Conduct problems	Paired t-test	2.3	1.6	1.5	2.1	0.059
Hyperactivity	Paired t-test	4.7	2.1	3.1	2.7	*0.036
Peer relationship problems	Paired t-test	1.9	1.4	2.0	1.9	0.397
Prosocial behavior	Paired t-test	7.5	2.2	6.8	2.7	0.313
Social skills and Behavior Problems (PKBS)						
Total Social Skills	Wilcoxon	76.0	16.8	79.8	15.4	0.777
Internalizing problems	Paired t-test	23.3	14.2	11.0	12.6	*0.007
Externalizing problems	Paired t-test	17.1	8.3	8.6	10.2	*0.009
Social cooperation	Wilcoxon	29.1	7.8	33.9	7.5	0.064
Social independence	Paired t-test	27.8	5.7	27.7	5.3	0.735
Social interaction	Paired t-test	19.0	4.6	18.8	6.0	0.974

Note. Means and standard deviations of the variables Anxiety, Behavioral Problems and Prosocial Behaviors, Social Skills, and Behavior Problems. M=mean; SD=standard deviation. *Statistically significant: $p < 0.05$.

The guardians' perceptions also differed from those of teachers' in regard to behavior problems (PKBS–BR), presenting a higher mean for Internalizing (p=0.007) and Externalizing Problems (p=0.009) (Table 3.2). No significant differences were found in the remaining domains regarding anxiety and behavioral indicators.

Correlation analyses revealed associations among children's anxiety, behavior problems, and social skills considering the perceptions of both teachers (Table 3.3) and parents (Table 3.4). The reports of teachers showed a positive correlation between Anxiety and Behavior Problems, so that the more frequent anxiety symptoms are perceived, the more frequently teachers perceive behavior problems. A negative correlation was also found between Total Anxiety and Social Skills; that is, the more frequently anxiety symptoms are perceived, the less frequently skillful behaviors are perceived, when measured on the Social Independence and Total Social Skills domains (Table 3.3).

Table 3.3. Correlations of the variables anxiety, behavior problems and prosocial behaviors, and social skills according to the perceptions of teachers.

Variables – Teachers	GenA	SocA	OCD	SepA	SDQ-T	SDQ-IP	SDP-EP	SDQ-ES	SDQ-conP	SDQ-H	SDQ-colP	SDQPS	PKBS-TSS	PKBS-IP	PKBS-EP	PKBS-SC	PKBS-SInd	PKBS-Sint
TA	0.75	0.70		0.82									-0.38				-0.47	
GenA			0.34	0.72						0.00				0.39	0.37		-0.38	
SocA				0.42	-0.37		-0.43											
SepA														0.56	0.57		-0.42	
SDQ-T						0.77	0.88	0.53	0.46	0.58	0.45			0.68	0.61	-0.59		
SDQ-IP							0.41	0.61		0.35	0.77			0.51	0.44			
SDQ-EP									0.46	0.59				0.57	0.52	-0.60		
SDQ-ES														0.56	0.46	-0.44		
SDQ-conP										0.59	0.33	-0.35		0.61	0.63	-0.46		
SDQ-H														0.49	0.45	-0.40		
PKBS-TSS														-0.57	-0.55	0.74	0.85	0.77
PKBS-IP															0.96	-0.76	-0.50	
PKBS-EP																-0.72	-0.51	
PKBS-SX																	0.49	0.48
PKBS-SInd																		0.49

Note. Acronyms: TA, Total Anxiety; GenA, Generalized Anxiety; SocA, Social Anxiety; SepA, Separation Anxiety; OCD, Obsessive Compulsive Disorder; SDQ–T, Total Difficulties; SDQ–IP, Internalizing Problems; SDQ–EP, Externalizing Problems; SDQ–ES: Emotional Symptoms; SDQ–conP, Conduct Problems; SDQ–H, Hyperactivity; PKBS–TSS, Total Social Skills; PKBS–IP, Internalizing Problems; PKBS–EP, Externalizing Problems; PKBS–SC, Social Cooperation; PKBS–SInd, Social Independence; PKBS–SInt, Social Interaction. Correlation test performed in R. Spearman's test.

Behavior problems (SDQ) were, in the perceptions of teachers, negatively associated with Social Cooperation (PKBS–BR), indicating that the more frequently teachers perceived behavior problems, the less frequently they perceived Social Cooperation. A positive correlation was found between behavior problems (SDQ) and Internalizing and Externalizing Problems (PKBS–BR): the more behavioral difficulties were identified in the SDQ, the more frequent Internalizing and Externalizing Problems were identified in the PKBS. Behavior problems in the Emotional Symptoms domain (SDQ) were positively correlated with Internalizing and Externalizing Problems (PKBS–BR). The Social Skills domains were associated with each other such that, the more frequent Social Skills were, the less frequent Internalizing and Externalizing Problems were identified, while the more frequent Internalizing and Externalizing Problems were perceived, the poorer Social Cooperation and Social Independence were.

Table 3.4 presents the correlations between the anxiety, behavior problems and social skills, based on the reports of parents/caregivers. Note that various Anxiety domains were associated with behavior problems (SDQ and PKBS–BR). Generalized Anxiety was positively correlated with Total Difficulties and Internalizing (SDQ) and Externalizing Problems (PKBS–BR).

Table 3.4. Correlations of the variables anxiety, behavior problems and prosocial behavior, and social skills, according to the perceptions of guardians.

Variables-guardians	GenA	SocA	OCD	FFH	SepA	Tept	SDQ-T	SDQ-IP	SDP-EP	SDQ-SE	SDQ-conP	SDQ-H	SDQ-coIP	PKBS-TSS	PKBS-IP	PKBS-EP	PKBS-SC	PKBS-SInd	PKBS-Sint
TA	0.75	0.80	0.67	0.76	0.66											0.44			
GenA		0.61	0.42		0.42		0.52	0.52	0.49	0.57					0.58	0.70			
SocA				0.57															
OCD				0.43	0.69	0.46				0.56									
SepA						0.70													
SDQ-T								0.80	0.89	0.53	0.70	0.85	0.61		0.66	0.53	-0.48		
SDQ-IP									0.58	0.78		0.50	0.61		0.52	0.47			
SDQ-EP										0.43	0.71	0.82		-0.49	0.59	0.51	-0.56	-0.48	
SDQ-ES																0.42			
SDQ-conP												0.48**		-0.59**	0.57**	0.50**	-0.69**	-0.55**	
SDQ-H													0.47		0.44		-0.44		
SDQ-SP														0.73**			0.63**	0.56**	0.64**
PKBS-TSS																	0.90**	0.83**	0.61**
PKBS-IP																0.63			
PKBS-SC																		0.63**	0.44**
PKBS-SInd						-0,51**													

Note. Acronyms: TA, Total Anxiety; GenA, Generalized Anxiety; SocA, Social Anxiety; SepA, Separation Anxiety; OCD, Obsessive Compulsive Disorders; FFH: Fear of Physical Harm; Tept, post-traumatic stress disorder; SDQ-T, Total Difficulties; SDQ-IP, Internalizing Problems; SDP-EP, Externalizing Problems; SDQ-ES: Emotional Symptoms; SDQ-conP, Conduct Problems; SDQ-H, Hyperactivity; PKBS-TSS, Total Social Skills; PKBS-IP, Internalizing Problems; PKBS-EP, Externalizing Problems; PKBS-SC, Social Cooperation; PKBS-SInd, Social Independence; PKBS-SInt, Social Interaction. Correlation test performed in R. Spearman's test and Pearson's test (**).

Behavior problems (SDQ) were associated with the Social Skills domains (PKBS-BR). Thus, the more frequently the guardians perceived Externalizing Problems, the less frequently they perceived behaviors that indicated Social Cooperation and Social Independence. Additionally, the more frequently they perceived Conduct Problems, the less frequently they identified Total Social Skills, Social Cooperation, and Social Independence. Prosocial behaviors (SDQ) were positively correlated with the total perception of Social Skills.

Similar to the perceptions of teachers, the guardians' perceptions show that behavior problems (SDQ) were positively correlated with behavior problems (PKBS-BR). Therefore, the more frequently Internalizing Problems were identified in the SDQ, the more frequently Internalizing and Externalizing Problems were identified in the PKBS-BR; the more frequently Externalizing Problems were identified in the SDQ, the more frequently Internalizing and Externalizing Problems were identified in the PKBS-BR.

4. Discussion

This study's objective was to describe indicators of behavior, anxiety and social skills among kindergarteners based on the reports of their parents/caregivers and teachers. This study's findings are relevant to supporting the development of preventive interventions focusing on the behavioral and emotional problems of kindergarteners. These interventions may have positive effects on the socioemotional development of children, reducing behavioral difficulties and improving their socioemotional competence (Anticich et al., 2013; Pahl & Barrett, 2010). Both studies tested the efficacy of the Friends Program, focusing on the development of self-regulatory skills among kindergarteners (Anticich et al. 2013) and school-aged children (Pahl & Barrett, 2010). The follow-up study reports that improved indexes of anxiety and socioemotional competence remained 12 months after the intervention (Pahl & Barrett, 2010). In the Brazilian context, the study conducted by Pavoski et al. (2018) adopted the Brazilian version of the Friends Program and found evidence of the program's efficacy among children aged between 6 and 7 years old, such as an increase in socioemotional competencies with fewer behaviors related to social problems and symptoms of anxiety and depression.

This study's sample was composed of children enrolled in kindergarten without prior diagnoses of anxiety symptoms or behavior problems; thus, most

children were expected to be classified as non-clinical, both for behavior problems and anxiety; though some children were considered to be in the clinical group. Most children in the clinical group presented behavior problems, Conduct Problems and Hyperactivity as measured by the SDQ. These findings are consistent with those presented by Santos and Celeri (2017). The study by Ramires, Passarini, Flores and Santos (2009) reports that aggressiveness and hyperactive behavior were among the main complaints that led parents to seek psychological treatment for their children in a school clinic. In the sphere of primary health care, one study using the SDQ detected a greater proportion of children reported by their parents as having Conduct Problems (Santos & Celeri, 2018). Similar to the parents/caregivers, the teachers reported that most children belonged to the non-clinical group, while most of the children in the clinical group were considered to present problems in the prosocial behavior domain, according to their perceptions.

Even though the literature shows that anxiety may reach clinical levels among kindergarteners, which may lead to greater intensity of their symptoms, as they get older (Almeida & Viana, 2013), most children were classified under the normal range. Once more, this finding may be explained by the fact this study addressed a typical sample. A larger percentage of children in the clinical group was found to present symptoms of Separation Anxiety (according to teachers and guardians) and Social Anxiety, which are the most common symptoms found in the age group of the children addressed in this study (Almeida & Viana, 2013). Separation Anxiety symptoms emerge between nine and 13 months of age, and may intensify beginning at the age of four, a period during which children usually enter school (Figueroa, Soutullo, Ono, & Saito, 2015). The entrance of children into the school environment is a time when they experience separation from attachment figures and are exposed to socialization, which may favor separation anxiety or social anxiety.

Comparison between the perceptions of guardians and teachers presented significant differences; that is, the guardians reported greater levels of Anxiety and Behavior Problems (Externalizing problems and Hyperactivity in the SDQ; and Internalizing and Externalizing problems in the PKBS-BR). These results are consistent with comparative studies addressing child behavior problems from the perspectives of both guardians and teachers, which report that guardians (most frequently represented by the mothers) make harsher assessments (Bolsoni-Silva et al., 2006; Major & Seabra-Santos, 2014). Additionally, a discrepancy between

informants who are guardians and those who are teachers, as well as the fact there is no primary informant (Major & Seabra-Santos, 2014), reinforces the need to take into account multiple sources of information when performing child behavior assessments. Differences in the conditions under which behaviors are observed, as suggested by Bolsoni-Silva et.al. (2006), might help explain differences in perceptive assessments by establishing hypotheses of situational specificity. These authors note that there are no parameters to compare between behavior assessments, which along with temporal differences among informants, may interfere in this phenomenon, as well as the conceptions and expectations held by each informant regarding the child's developmental process (Bolsoni-Silva et al., 2006). The analysis of correlations between behavior problems, social skills, and anxiety confirmed an inverse correlation previously reported by Brazilian studies (Cia & Barham, 2009; Fantinato & Cia, 2015; Mariano & Bolsoni-Silva, 2016). Even though there is some specificity in the correlations based on the reports of guardians and teachers, associations between behavior problems and symptoms of anxiety prevailed and were accompanied by fewer indicators of social skills (social independence and social cooperation) and prosocial behaviors. These results are an alert and confirm that there is a need to investigate behavior problems early in childhood, as these problems tend to stabilize or even aggravate over time (Dias et al., 2011), threatening the development of social skills (Cia & Barham, 2009).

The perceptions of guardians and teachers regarding anxiety symptoms were accompanied by a perception of more frequent behavior problems. The presence of anxiety symptoms at such a young age suggests failures in the development of emotional regulation. Emotional regulation is influenced (interactionally and bidirectionally) by children's characteristics, such as temperament, as well as by their contexts, and by the characteristics of their co-regulators (Sameroff, 2009). According to Olson & Lunkenheimer (2009), failure in the self-regulatory processes may prevent the acquisition of social competencies. The finding that these symptoms are associated with more frequent behavior problems shows the importance of early detection of and intervention in regulatory processes in order to minimize the risk of maladaptive outcomes, such as the presence of behavior problems (Cia & Barham, 2009; Dias et al., 2011).

Specifically, the guardians' reports indicate a positive correlation between prosocial behavior and social skills among the kindergarteners. In fact, prosocial

behaviors, especially in the way they are measured by the SDQ, compose the class of socially skillful behaviors, such as those related to the offer of help (Bolsoni-Silva et al., 2006). Additionally, prosocial behaviors, as a dimension of social competence, have been associated with social acceptance and psychological adjustment (Ferreira et al., 2016). This fact reinforces the importance of assessing behavioral indicators during childhood, including those related to social skills, in order to support the proposal of interventions and preventive measures directed to kindergarteners within the school environment (Dias et al., 2011). The reason for this is that the development of prosocial behaviors is influenced by the relationships established between children and their caregivers, and also by the relationships established with teachers (Ferreira et al., 2016). Socialization experiences are intensified in the school environment and encourage the emergence of self-regulatory competencies, which are essential to the development and maintenance of positive relationships with people, in general (Linhares & Martins, 2015).

This study presents some limitations, such as a small sample size that limits more complex analyses, and lack of more specific information regarding the socio-demographic characteristics of the children and their families. Another limitation is the use of a measure of anxiety for kindergarteners, for which there is no validity evidence in regard to the Brazilian population. Additionally, considering that socioemotional development is composed of bidirectional interactional bases, knowledge of the characteristics of children, such as temperament, and those of their regulators (parents and teachers) could improve the understanding of the developmental outcomes represented by the indexes of behavior problems, anxiety, social skills and the relationships among them. Future studies addressing larger samples could include these variables to obtain more robust analyses of the variation of behavior problems, anxiety and social skills, under different conditions.

The contributions of this study confirm the importance of collecting data from multiple and significant informants when performing a psychological assessment; that is, informants should be part of children's routines, know and actively participate in their daily lives, as they should be considered reliable observers, such as teachers and parents. The instruments adopted here to measure behavior problems and social skills provide information not only about the children's deficits, but also about their competencies, so this study supports proposals for interventions that consider the particularities of groups and specific cases.

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