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Schoolchildren diagnosed with ADHD and their guardians: impact of promote-children and promote- parents adapted in combination

Escolares diagnosticados com TDAH e responsáveis: impacto do promote-crianças e promote-pais adaptados combinados

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Abstract

Interventions to promote social skills aimed at children and adolescents diagnosed with Attention-Deficit/Hyperactivity Disorder and their guardians are scarce. The aim was to verify the impact of combined psychological interventions on the behavioral repertoire of children and adolescents diagnosed with Attention-Deficit/Hyperactivity Disorder and their guardians using the adapted Promoting-Children and Promoting-Parents programs, as well as to compare students in terms of medication use. Seven public school children and their guardians took part. The following instruments were used: *Parenting Educational Social Skills Interview Script*, *Conners Scale*, *Social Skills Rating System*, *Strengths and Difficulties Questionnaire*, and analyses carried out using the Jacobson and Truax Method and inferential analyses. Convergence was observed between the analyses and instruments in terms of skilled behaviors, reduction of problematic behaviors, recovery in hyperactivity, a significant difference in the internalizing behaviors of schoolchildren who do not use medication, gains in educational social skills and a decrease of negative parenting practices. The conclusion is that the intervention was effective.

Keywords: Attention deficit hyperactivity disorder; Children; Parent-child relationships; Psychosocial intervention; Teenager.

Resumo

Intervenções voltadas à promoção de habilidades sociais para crianças e adolescentes diagnosticados com Transtorno de Déficit de Atenção e Hiperatividade e seus responsáveis ainda são escassas. Este estudo teve como objetivo verificar o impacto de intervenções psicológicas combinadas sobre

o repertório comportamental de crianças e adolescentes diagnosticados com Transtorno de Déficit de Atenção e Hiperatividade e seus responsáveis, utilizando os programas Promove-Crianças e Promove-Pais adaptados, bem como comparar estudantes quanto a uso de medicação. Participaram da pesquisa sete estudantes da rede pública e seus responsáveis. Foram utilizados os instrumentos Roteiro de Entrevista de Habilidades Sociais Educativas Parentais, Escala de Conners, Social Skills Rating System e Strengths and Difficulties Questionnaire. As análises foram realizadas pelo Método Jacobson e Truax e de procedimentos inferenciais. Observou-se convergência entre os instrumentos no que se referiram aos comportamentos habilidosos, redução de comportamentos problemáticos; recuperação em hiperatividade; e diferenças significativas em comportamentos internalizantes entre estudantes que não utilizavam medicação. Também foram observados ganhos em habilidades sociais educativas e redução de práticas parentais negativas. Conclui-se que a intervenção apresentou eficácia.

Palavras-chave: Transtorno de déficit de atenção com hiperatividade; Criança; Intervenção psicossocial; Relações entre pais e filhos; Adolescente.

Attention-Deficit/Hyperactivity Disorder (ADHD) is considered the most common neuropsychiatric condition in childhood (American Psychological Association [APA], 2023), and is associated with impairments in children's mental health, social and academic development, and quality of life (APA, 2023; Storebø et al., 2019). The prevalence of children and adolescents with ADHD in Brazil is between 5 and 8% (Ministério da Saúde, 2022). In order to diagnose ADHD, a multimodal assessment is recommended, including families and schools as informants, with the presence of symptoms in more than one environment, in order to avoid errors (APA, 2023).

Currently, combined treatment (psychosocial and medication) is recommended, including family, teachers, and peers, as well as individual care for the child/adolescent (Barkley, 2020; Ministério da Saúde, 2022; Storebø et al., 2019). Studies indicate treatments that include psychosocial interventions or start with them in order to improve behavioral problems, where medication does not seem to work (Abrahão, Elias et al., 2022; Storebø et al., 2019).

Considering the impairments associated with ADHD, externalizing, and internalizing behavioral problems (Justino & Bolsoni-Silva, 2022) are present and characterize the disorder, and this can be an influencing variable in false positive diagnoses (Abrahão, 2021). Considering that behaviors are modifiable and can be taught, it has been well documented that social skills, when present, are protective for child and adolescent development (Z. A. Del Prette & Del Prette, 2019), however, for the ADHD population, studies that characterize or propose interventions related to social skills are insufficient in Brazil (Abrahão, 2021), and performing combined treatment for children/adolescents and parents/caregivers seems likely to have better results.

Regarding family members, the negative effect that ADHD symptoms have on the relationships established in this context stands out, characterized by difficulties and damage to parental mental health (Liang et al., 2021; Marino et al., 2019). Moreover, guardians experience stress, difficulties in establishing rules and limits, in expressing affection and communication, affecting their parenting style (Rezende et al., 2019), as well as difficulties associated with the low presence of positive educational practices on the part of mothers (Justino & Bolsoni-Silva, 2022), conditions that may increase the difficulties of children and adolescents, given the bidirectionality of relationships. Marino et al. (2019) checked the associations between behavioral profiles, perceptions of quality of life, social support and parenting practices adopted by 26 guardians of children and adolescents with ADHD. The data revealed that negative practices were more frequently associated with behavioral problems and lower adaptive parental functioning.

On the other hand, positive parenting practices favor the improvement of the behavioral repertoire (Abrahão, Elias et al., 2022; Ferreira et al., 2016; Rocha et al., 2013) and of the main symptoms of ADHD (Abrahão, Elias et al., 2022). Contextual variables present in the circumstance

may influence parental educational practices. In the data triangulation analysis by Abrahão, dos Santos Elias et al. (2022), an association was found between the resources perceived by 43 children with ADHD and the support received by their mothers in homework tasks and responses obtained through interviews. These studies highlight and corroborate the importance of including the family as a possibility for planning interventions, with developments in the educational and social dimensions, considering the assessment and development of parental educational practices.

Educational practices within the theoretical field of social skills are referred to as Educational Social Skills (ESS) (Z. A. Del Prette & Del Prette, 2019). The ESS can be an important tool for improving relationships between parents and children with ADHD. Bolsoni-Silva et al. (2016) indicate that when ESS is taught, it promotes learning and the development of other people. The ESS involves the Social Educational Parenting Skills of Communication, Social Educational Parenting Skills of Expressing Feelings and Coping, and Social Educational Parenting Skills of Setting Limits. Studies linking ADHD to ESS in Brazil and worldwide are insufficient (Ferreira et al., 2016; Rocha et al., 2013).

Considering the difficulties that affect the lives of children and adolescents diagnosed with ADHD, there are harmful influences such as stigmas, pathologization of the disorder, educational policies, pedagogical strategies, and medical services, acting on school experiences and subjectivity (Abrahão, 2021), a condition that directly influences other contexts (family and school) where essential relationships are established for psychosocial development. More recently, highlighting the importance of this issue, students with ADHD have been included in legislation that provides for their inclusion in the school context. Brazil's Law N° 14.254 of the 2021 states that public and private schools must guarantee comprehensive and specific early monitoring for students with ADHD, among others, whose needs must be met in a multidisciplinary manner (Presidência da República, 2021). In parallel, with regard to policies linked to the school context, Brazil's Law N° 13.935 of the 2019 provides for the provision of psychological and social work services in public basic education networks, which will include, among other demands, care for students with ADHD and those involved, emphasizing the importance of these professionals' education and training (Brasil, 2019).

Based on the presentation of the damages and gaps related to ADHD, especially considering the lack of interventions in the country, with the intention of contributing to the area, regarding the promotion of social skills of guardians, children, and adolescents diagnosed with ADHD, the Promoting-Parents (Bolsoni-Silva & Fogaça, 2018) and Promoting-Children programs (Falcão & Bolsoni-Silva, 2016), were chosen for their quality of benefit provided in terms of behavioral problems and the promotion and development of a skillful behavioral repertoire, as well as the reduced number of sessions compared to other policies carried out in Brazil (Ferreira et al., 2016; Rocha et al., 2013). International studies have developed interventions focused on social skills for schoolchildren with ADHD, showing increased social skills and reduced symptoms (Fabiano et al., 2021; Storebø et al., 2019). Leckey et al. (2018) carried out combined social skills training programs for parents and children, with a control group, using 'The Incredible Years Basic Parent Training' by Webster-Stratton and Reid (2010). The results showed no gains in the group that received the combined intervention. A similar result was seen in the meta-analysis by Storebø et al. (2019), indicating no significant difference ($p = 0.69$), comparing groups that received the combined treatment with those aimed only at children. To date, no studies have been reported in Brazil involving interventions to promote concomitant social skills with schoolchildren diagnosed with ADHD and their guardians. In view of these facts, the aim of this study was to verify the impact of combined psychological interventions on the behavioral repertoire of children and adolescents with a medical diagnosis of ADHD and their guardians using the adapted Promoting-Children and Promoting-Parents combined programs.

Methods

Participants

Seven schoolchildren (aged between nine and 15 years old) took part in the interventions, one girl and six boys (children P1, P2, P3, P4, and adolescents P5, P6, and P7) and six guardians (aged between 40 and 54), five mothers and one father. These participants were part of the control group from a previous study (information withheld), which received the intervention for ethical reasons. The inclusion criterion for the schoolchildren was having a medical report for ADHD from the Municipal Department of Education, and for the guardians, agreeing to take part. Only P7 had a comorbid medical diagnosis of Oppositional Defiant Disorder. Regarding the treatment they received, four did not use any medication (P1, P2, P5, P6), and three used (P3, P4, P7).

Instruments

- Parental Educational Social Skills Interview Script (P-ESS-IS) (Bolsoni-Silva et al., 2016). This instrument assesses the interactions between parents and children/adolescents by surveying and characterizing positive educational practices (ESS), negative practices, contextual variables, social skills, and complaints of behavioral problems presented by students (aged one to 12). Presents (Cronbach's alpha) for the total instrument (0.649).

- Social Skills Rating System, Behavior Problems and Academic Competence (SSRS-BR): version for parents and children (P. A. Z. Del Prette et al., 2016). The version for parents has two scales for them to evaluate their children in terms of Social Skills and behavior problems. It showed a reliability value (Cronbach's alpha) for the social skills scale of 0.85 and for behavior problems of 0.84. The version for children consists of a self-assessment, made up of social skills subclasses with a reliability of 0.73.

- Conners Scale (CPTRS) – reduced version for parents (Gaião & Barbosa, 1998). The scale screens for problem behaviors and the ADHD index. The internal consistency index for the total (0.79), and values for the factors: (Hyperactivity = 0.83), (Fears/Somatization = 0.74), (Perseverance/Perfectionism = 0.67) (Theft/Antisocial behavior = 0.62).

- Strengths and Difficulties Questionnaire (SDQ). This is a questionnaire that screens for mental health problems in children and adolescents. It consists of five subscales: emotional symptoms, conduct problems, hyperactivity, peer relationship problems and pro-social behavior. The internal consistency indices are 0.80 (values for the total difficulties score), and for the test-retest the correlation is 0.79 (Cronbach's alpha) (Saur & Loureiro, 2012).

After approval by the Ethics Committee (15046719.3.0000.5407), the consent of the legal guardians was obtained by means of the Informed Consent Form and the child or adolescent was given the Term of Assent. The following instruments were used in the pre- and post-intervention assessments: P-ESS-IS (individually), SSRS, SDQ and Conners Scale (as a group) with the legal guardians and with the child or adolescent, the SSRS was applied in a group at a psychology clinic.

Application of Adapted Promoting-Children and Promoting-Parents

The intervention aimed at children and adolescents diagnosed with ADHD used the Promoting-Children program (Falcão & Bolsoni-Silva, 2016), which received six adaptations

(Abrahão, 2021; Abrahão, Elias et al., 2022), lasting 10 weeks, with three groups (one group, with three adolescents and two groups, each with two children). Regarding the intervention for guardians, the Promoting-Parents program (Bolsoni-Silva & Fogaça, 2018) was used, plus five adaptations (Abrahão, 2021) carried out over seven weeks, in a single group, both of which took place in the first author's office. The participants received the adapted Promoting-Children and Promoting-Parents combined, simultaneously with the children and adolescents and their guardians from September to December 2021.

Data Analysis Procedure

The results were analyzed using the JASP statistical program. Descriptive statistics were obtained, and normality was checked using the Shapiro-Wilk test. When this parameter was met, paired comparisons were made using Student's t-test; if parametric statistics were not possible, the non-parametric Wilcoxon correlation test was used; the significance level considered was p and rank biserial correlation (non-parametric). The measurements considered as small effect when d varied between 0.2 and 0.5; high for d between 0.50 and 1; and very high when $d > 1$ (Marôco, 2011).

In order to operationalize the JT Method, Clinical Significance, and the Reliable Change Index (RCI) were calculated, using Criterion A, by entering the pre- and post-intervention data of the sample studied into an Excel spreadsheet. For the analyses, we used data provided by the instruments' manuals regarding the reliability index. The JT Method considers changes greater than 1.96 to be positive and reliable, Negative Change to be Reliable when $(RCI > -1.96)$ and Absence of Change $(1.96 > RCI > -1.96)$, considering the confidence interval. RCI verifies whether the changes that occurred between pre- and post-intervention were due to the procedures carried out or were due to measurement errors (Villa et al., 2012). In Clinical Significance, it is possible to verify the external validity of the intervention's effects, based on the participant (Villa et al., 2012); this analysis was not possible for the P-ESS-IS alone, as it did not meet the necessary criteria.

Results

First, the results would have been statistically analyzed, followed by the analyses using the JT method, both considering the pre- and post-intervention measurements after the conclusion of the adapted Promoting-Children and Promoting-Parents programs offered simultaneously.

Statistical Analyses

Regarding the results obtained in the intra-group comparison, Table 1 shows that, according to the SSRS answered by the guardians evaluating the students' behavior, there was a significant difference between the initial assessment and the reassessment for total social skills, responsibility, self-control, social resourcefulness, and civility, with a high effect size, indicating an increase in the skilled behavioral repertoire. There was an increase in the frequency of affectivity at reassessment, with a medium effect size. With regard to behavior problems, there was a decrease, with a significant difference between the assessments for total behavior problems and internalizing problems, with a very high effect size, and for externalizing problems, with a high effect size.

Table 1

Comparisons between intra-group assessment and reassessment with combined intervention after the adapted Promoting-Children and Promoting-Parents interventions, obtained from the Conners Scale, Strengths and Difficulties Questionnaire, and Parenting Educational Social Skills Interview according to guardians and Social Skills Rating System (according to guardians and schoolchildren)

Variable	Assessment		Reassessment		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
SSRS guardians							
Total Social Skills	53.7	6.7	63.5	12.1	-2,121	0,039*	-0,802
Responsibility	9.1	3.2	11.7	2.4	-1.996	0.046*	-0.754
Self-control	11.0	2.7	13.4	4.0	-1.942	0.050*	-0.734
Affectivity	13.2	1.8	15.1	4.6	-1.233	0.134	-0.462
Social Skills	8.4	2.6	10.2	2.2	-2.322	0.030*	-0.878
Civility	11.8	1.4	13.0	2.3	5.000	0.071	-0.643
Total behavior problem	16.8	6.3	12.7	6.6	2.950	0.013*	1.115
Externalizing problems	11.2	4.1	8.7	4.5	26.000	0.025*	0.893
Internalizing problems	5.5	2.8	4.0	2.7	2.023	0.009*	1.235
Conners guardians							
Total	42.7	9.3	31.8	12.5	6.018	<0.001*	2.128
Hyperactivity	16.2	6.9	9.5	6.3	4.700	0.001*	1.662
Fear/somatization	9.3	3.1	6.6	3.4	2.368	0.025*	0.837
Perfectionism/perseverance	10.7	2.4	10.7	3.6	0.000	0.500	0.000
SDQ guardians							
Total	27.5	7.8	24.7	6.9	1.201	0.134	0.425
Emotional symptoms	5.7	2.0	4.5	2.2	1.667	0.070	0.589
Conduct problems	3.5	1.8	3.3	2.5	0.196	0.425	0.069
Hyperactivity	7.6	2.5	5.7	2.3	3.638	0.004*	1.286
Peer relationship problems	2.8	0.8	3.0	1.6	-0.357	0.634	-0.126
Pro-social behavior	6.3	2.8	8.1	1.3	-1.825	0.055*	-0.645
RP-ESS-IS guardians							
P-ESS	10.4	3.8	12.2	2.6	-1.543	0.087	-0.583
Social Skills (schoolchildren)	14.0	5.2	18.0	1.7	-2.223	0.034*	-0.840
Context variables	19.1	2.8	18.7	3.1	0.493	0.680	0.186
Total positive	46.8	10.0	52.8	5.9	-1.930	0.051*	-0.729
Negative practices	12.2	3.2	3.5	2.5	1.411	<0.001*	3.935
Behavior problems	13.4	5.0	4.2	4.2	4.335	0.002*	1.638
Total Negative	29.1	8.4	10.7	7.9	6.577	<0.001*	2.486

Note: * Significant difference. *t*: Student's test; *d*: Cohen's effect size; Significant *pd*: effect size is given by the rank biserial correlation. SDQ: Strengths and Difficulties Questionnaire; RP-ESS-IS: Parenting Educational Social Skills Interview; SSRS: Social Skills Rating System.

Regarding the Conners rating scale answered by the guardians, there was a reduction in ADHD symptoms, with a significant difference between the total assessment and hyperactivity, with a very high effect size, and for fears and somatization, with a high effect size. In the perfectionism and perseverance variable, the group showed no change in the mean values.

With regard to the SDQ answered by the guardians, there was a significant difference in hyperactivity, with a very high effect size, indicating a decrease in the symptom, and in pro-social behavior, with a high effect size, showing an increase in the skilled repertoire. There was a decrease in the frequency of emotional symptoms, with a medium effect size, conduct problems, with a small effect size, and in peer relationship problems, there was an increase with a small effect size.

For the P-ESS-IS answered by guardians, there was a significant difference between the assessments for the students' social skills and for the positive total, with a high effect size, indicating behavioral improvement. There was an increase in the frequency of parental educational social

skills, with a high effect size, and a decrease in the context variables, with a small effect size. There were also significant changes in negative educational practices, the total negative repertoire of the guardians and the behavioral problems of the schoolchildren, with very high effect sizes, showing a decrease in behavioral problems in this dyad.

Regarding the SSRS answered by the students, Table 2 shows a significant difference for total social skills with a high effect size, and self-control with a very high effect size, indicating behavioral gains. In empathy and affectivity, responsibility and assertiveness, there was an increase in frequency with a medium effect size.

Table 2

Comparisons between intra-group assessment and reassessment with combined intervention after the adapted Promoting-Children and Promoting-Parents interventions. obtained in the Social Skills Rating System according to the self-assessment of children and adolescents

Variable	Assessment		Reassessment		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
School-based SSRS							
Total	22.7	5.4	28.5	7.6	-1.982	0.047*	-0.749
Empathy/affectivity	6.4	2.5	7.8	1.6	-1.179	0.142	-0.445
Responsibility	7.1	2.1	7.7	1.4	-0.679	0.261	-0.257
Self-control	6.0	2.7	8.5	2.5	-3.057	0.011*	-1.155
Assertiveness	2.7	0.7	4.0	2.3	-1.236	0.131	-0.467

Note: *Significant difference. *t*: Student's test; *d*: Cohen's effect size; SSRS: Social Skills Rating System.

Analyses were carried out comparing participants taking ($n = 3$) or not taking ($n = 4$) medication for ADHD, considering the SSRS (according to guardians and self-assessment of children and adolescents), SDQ, Conners Scale and ESS-IS answered by guardians. Differences were found only for the variables internalizing behavior problems (SSRS) and fears/somatization (Conners) answered by guardians. The pre-intervention values indicated that the participants' results were equivalent: internalizing behavior problems – SSRS ($W = 2.500$, $p = 0.266$), and fears/somatizations – Conners ($W = -0.253$, $p = 0.810$); with statistically significant changes after the intervention for internalizing behavior problems, according to the SSRS ($W = 0.000$, $p = 0.048$), and fears/somatization, according to Conners ($W = 0.000$, $p = 0.050$), showing that participants who did not use medication did better than the group who used ADHD medication.

With regard to the analysis of the JT Method, Table 3 shows that, according to the assessment of those responsible according to the SSRS, there was no reliable change for the following variables responsibility, self-control, affectivity, social resourcefulness, civility, and internalizing behavior problems for participants P1, P2, P3, P4, P5, and P6. For externalizing behavior problems, there were clinically negative changes for P1 and P4, and clinically positive changes for P3 and P6, whereas no change for P2 and P5.

Regarding the evaluation of those responsible for the Conners Scale, a positive clinical change was noted for all participants in total and hyperactivity, with P7 showing a significant reliable improvement. In the fears/somatization variable, positive clinical change was noted for P1, P2, P4, P5, and P6, whereas P7 showed negative clinical change. For the variables perseverance/perfectionism and theft/antisocial behavior, all the participants showed no clinical change.

Table 3

Analysis of the Reliable Change Index and Clinical Significance of participants according to the Social Skills Rating System (assessed by guardians and schoolchildren). Conners Scale, Strengths and Difficulties Questionnaire, and Parenting Educational Social Skills Interview (assessed by guardians) after the combined intervention

Variable	Participant													
	Reliable Change Index/Reliability Score													
	P1		P2		P3		P4		P5		P6		P7	
SSRS-guardians														
Responsibility	-1.80	ARC	1.80	ARC	1.80	ARC	-1.80	ARC	1.80	ARC	1.80	ARC	-	-
Self- control	1.92	ARC	-1.92	ARC	1.92	ARC	-1.92	ARC	1.92	ARC	0.00	ARC	-	-
Affectivity	1.62	ARC	0.00	ARC	1.62	ARC	-1.62	ARC	1.62	ARC	1.62	ARC	-	-
Social skills	1.69	ARC	-1.69	ARC	1.69	ARC	-1.69	ARC	1.69	ARC	-1.69	ARC	-	-
Civility	0.00	ARC	0.00	ARC	1.64	ARC	-1.64	ARC	1.64	ARC	1.64	ARC	-	-
Externalizing problems	2.50	RNC	0.00	ARC	-2.50	RPC	2.50	RNC	0.00	ARC	-2.50	RPC	-	-
Internalizing problems	1.67	ARC	-1.67	ARC	-1.67	ARC	0.00	ARC	-1.67	ARC	0.00	ARC	-	-
Conners-guardians														
Total	-2.18	RPC	-2.18	RPC	-2.18	RPC	-2.18	RPC	-2.18	RPC	-2.18	RPC	-2.18	RPC
Hyperactivity	-2.43	RPC	0.00	ARC	-2.43	RPC	-2.43	RPC	-2.43	RPC	-2.43	RPC	-2.43	RPC
Fear/somatization	-1.96	RPC	-1.96	RPC	0.00	ARC	-1.96	RPC	-1.96	RPC	-1.96	RPC	1.96	MNC
Perfectionism/perseverance	-1.74	ARC	1.74	ARC	1.74	ARC	1.74	ARC	1.74	ARC	1.74	ARC	1.74	ARC
Theft / antisocial behavior	0.00	ARC	0.00	ARC	0.00	ARC	0.00	ARC	0.00	ARC	0.00	ARC	0.00	ARC
SDQ-responsáveis														
Total	2.36	RNC	2.36	RNC	-2.36	RPC	-2.36	RPC	-2.36	RPC	-2.36	RPC	-2.36	RPC
Emotional symptoms	1.71	ARC	-1.71	ARC	-1.71	ARC	1.71	ARC	-1.71	ARC	-1.71	ARC	-1.71	ARC
Conduct problems	1.58	ARC	-1.58	ARC	-1.58	ARC	1.58	ARC	1.58	ARC	1.58	ARC	-1.58	ARC
Hyperactivity	0.00	ARC	-2.04	MPC	-2.04	RPC	-2.04	RPC	-2.04	RPC	-2.04	RPC	-2.04	RPC
Peer relationship problems	-1.54	ARC	1.54	ARC	-1.54	ARC	0.00	ARC	1.54	ARC	0.00	ARC	1.54	ARC
Pro-social behavior	1.77	ARC	1.77	ARC	0.00	ARC	-1.77	ARC	0.00	ARC	1.77	ARC	1.77	ARC
P-ESS-IS guardians														
P-ESS	2.40	RPC	2.40	RPC	2.40	RPC	-2.40	RNC	2.40	RPC	2.40	RPC	-2.40	RNC
Social Skills (schoolchildren)	2.40	RPC	2.40	RPC	0.00	ARC	2.40	RPC	2.40	RPC	2.40	RPC	-2.40	RNC
Context variables	2.40	RPC	2.40	RPC	-2.40	RNC	2.40	RPC	-2.40	RNC	-2.40	RPC	-2.40	RNC
Total positive	2.40	RPC	2.40	RPC	0.00	ARC	2.40	RPC	2.40	RPC	2.40	RPC	-2.40	RNC
Negative practices	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC
Behavior problems	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC
Total Negative	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC	-1.68	ARC

Note: Highlighted in bold. Values that reached clinical significance. ARC: Absence of reliable change; RNC: Reliable negative change; RPC: Reliable Positive Change; SDQ: Strengths and Difficulties Questionnaire; RP-ESS-IS: Parenting Educational Social Skills Interview; SSRS: Social Skills Rating System.

According to the SDQ answered by guardians, for the instrument as a whole, there was negative clinical change for P1 and P2, and positive clinical change for P2, P3, P4, P5, P6, and P7. For the variables emotional symptoms, conduct problems, peer relationship problems and pro-social behavior, the participants showed no clinical change. In the hyperactivity variable, there was no change for P1 and positive clinical change for P2, P3, P4, P5, P6, and P7, with P2, P3, P4, P5, and P7 showing significant reliable improvement.

Regarding the assessment of guardians according to the P-ESS-IS, in the total parental educational social skills variable, there was a positive clinical improvement for P1, P2, P3, P4, P5 and P6, while P7 showed a negative clinical change. For the schoolchildren's social skills variable, positive clinical change was observed for P1, P2, P4, P5 and P6, while P3 showed no change and P7 showed negative clinical change. For the context variables, positive clinical change was observed for P1, P2 and P4, while P3, P5, P6 and P7 showed negative clinical change. For the context variables, there was positive clinical change for P1, P2, and P4, while P3, P5, P6, and P7 showed negative clinical change. In the positive total, P1, P2, P4, P5, and P6 had positive clinical change, while P3 had no change and P7 had negative clinical change. For the negative educational practices of guardians, behavioral problems of schoolchildren and total negative, there was a lack of clinical change for all the participants. Closing the presentation of the analyses, according to the children and adolescents' self-assessment of the SSRS, there was no clinically significant change for the following variables empathy, responsibility, self-control/civility, and assertiveness for the participants.

Discussion

The aim of this study was to verify the impact of combined psychological interventions on the behavioral repertoire of children and adolescents diagnosed with ADHD and their guardians using the adapted Promoting-Children and Promoting-Parents programs combined, using inferential statistical analyses and the JT Method.

Important results were obtained, such as the significant improvement, after completing the programs, for all SSRS participants for total social skills, responsibility, self-control, social resourcefulness, and civility, with a high effect size, skills that are impaired in children diagnosed with ADHD (Abrahão, 2021) and that are essential for better interpersonal relationships (Z. A. Del Prette & Del Prette, 2019; Justino & Bolsoni-Silva, 2022). Moreover, the improvement in self-control is important because it is the central challenge related to ADHD (Barkley, 2020; Ministério da Saúde, 2022). Along with improvement in behavior, there was a significant reduction in total, externalizing and internalizing behavioral issues, which is well described in the literature (Z. A. Del Prette & Del Prette, 2019). Behavioral problems characterize ADHD and can even lead to misdiagnosis (Abrahão, 2021), even impacting on the lives of children, adolescents, and their families, reducing quality of life, social functioning, and mental health (APA, 2023; Storebø et al., 2019), underlining the positive effect of combined treatment on these variables.

Regarding the Conners Scale, used as a screener for ADHD symptoms, a significant improvement was observed for the total, hyperactivity and fears and somatizations, the effect on a behaviors dimension corresponding to externalizing behavior problems can be inferred, considering the total index and hyperactivity, and in the internalizing behaviors dimension, referring to fears and somatizations. Therefore, it can lead to the conclusion that SSRS and the Conners Scale converged in the findings.

In conformity, the SDQ answered by the guardians also showed a significant improvement in the hyperactivity symptom (as seen in Conners Scale), and a gain in pro-social behavior, which may correspond to the dimension of skillful behaviors as presented by the SSRS. These findings are key as they indicate that the proposed interventions acted on the behavioral repertoire of children and adolescents diagnosed with ADHD, as recognized by the guardians.

According to the P-ESS-IS, considering the self-assessment of the parental and children's behavioral repertoire, there was a significant improvement for the positive total, which corresponds to the sum of the items related to parental educational social skills, context variables, and children's social skills, i.e., the improvement observed acted in a bidirectional manner, once again reaffirming the importance of specific treatments to address the challenges of students diagnosed with ADHD and their families, as reported by other studies (Abrahão, 2021; Webster-Stratton & Reid, 2010). Moreover, there was a significant reduction in negative educational practices and in the children's behavioral problems, so it can be inferred that guardians learned and/or enhanced new behaviors, helping improve personal relationships (Bolsoni-Silva & Fogaça, 2018; Rocha et al., 2012).

In the self-assessment of children and adolescents diagnosed with ADHD, there was a significant improvement in total social skills and in the social skill of self-control, complementing the assessments of their guardians through the SSRS. These findings are valuable, since they include the self-perception of their potential after completing the interventions, different from previous responses without undergoing the intervention (Abrahão, 2021). In summary, the statistical analyses showed significant improvements with effect sizes ranging from very high to high, and this data indicates that similar results may be found in larger samples, as discussed by Lindenau and Guimarães (2012).

Regarding the more refined analysis made possible by the JT Method and considering the individual scores, the findings revealed that in the assessment of those responsible for the SSRS, there was no improvement for the total classes and social skills, unlike the statistical analyses, with worsening of externalizing behavior problems for children 1 and 4, and improvement for child 3 and adolescent 6. These findings, while diverging from the inferential statistics, make it possible to distinguish between changes not attributed to measurement errors (Aguiar et al., 2009), since the criteria require two standard deviations for improvement, based on the individual score. It can be inferred that, being an analysis that requires the reliability index of the instrument, it should be borne in mind that these measurements were obtained from a population that was not diagnosed with ADHD, and this may influence the results found. On the other hand, these findings encourage indicators to be considered individually, which can serve to better understand the dyads and identify difficulties or variables that may affect the results. On the other hand, the method's usefulness when applied to small samples has been demonstrated, considering the refinement of the findings and adjustments to the interventions, if necessary. Future studies may well look for designs that achieve this goal.

According to the JT Method, in the guardian's evaluation through the Conners Scale, a positive clinical change was observed for the total symptomatology and for hyperactivity in all the participants, meaning that the changes that occurred when comparing the pre- and post-intervention scores can be attributed to the interventions themselves (Aguiar et al., 2009). Moreover, the adolescent P7 showed clinically significant changes, meeting both criteria, and being considered recovered (Villa et al., 2012), which is very important when considering that this participant, in addition to ADHD, had Oppositional Defiant Disorder. However, this adolescent was the only one to show clinical worsening for fears and somatization, suggesting that he has greater

difficulties regarding internalizing behavior problems. Given the benefit of the interventions, this study contributes to the gap in interventions to promote social skills for adolescents diagnosed with ADHD (Storebø et al., 2019). It should be noted that for the Conners Scale, the analyses (inferential and JT Method) were confirmed.

With regard to the SDQ answered by guardians, there was a positive clinical change for hyperactivity for six participants, five of whom obtained significant reliable improvement, moving to the recovered classification (Villa et al., 2012). This data suggests complementarity to the hyperactivity symptom measured by the Conners Scale and between the analyses carried out, which is promising, given the impact of interventions on these symptoms. Most of the participants showed positive clinical changes for the total SDQ, which refers to indicators of behavioral difficulties, reinforcing the internal validity of the interventions (Aguiar et al., 2009). The participants who showed clinical worsening for the total SDQ (two children), and no change for hyperactivity, are the children of the same mother guardian, indicating cohesion in their assessment, which may also influence the results. In this respect, Gaião and Barbosa (1998) argue that guardians generally evaluate their own children more negatively than teachers, as they lack a greater repertoire for comparing behaviors.

Based on the JT Method applied to the P-ESS-IS answered by guardians, a positive clinical improvement was observed for most of the participants in ESS, social skills (school) and total positive, indicating that this gain is related to the intervention carried out; with the exception of P7, whose mother reported clinical worsening, which also seems to influence the assessment of her child's resources. In the context variables, three guardians reported clinical improvement and three clinical worsening, i.e., results that may be attributed to the interventions themselves (Aguiar et al., 2009; Villa et al., 2012). These findings are noteworthy because although there was an improvement in the ESS (such as communicating, expressing affection etc.), the contextual variables contingent on parental behavior, such as conversations, asking questions, expressing feelings and opinions, among others, decreased in frequency, and in this sense the analyses adopted are confirmed for this variable. In order to better understand these results, observation of the dyads and/or qualitative analysis could provide possible interpretations.

Finally, the results obtained via the SSRS assessed by children and adolescents diagnosed with ADHD showed no clinical change, indicating that no statements can be made regarding the effectiveness of the interventions (Aguiar et al., 2009; Villa et al., 2012). On the other hand, these results diverge from the inferential analysis, which showed a significant improvement according to the perception of the students. In this sense, the hypothesis about the reliability indicators of this instrument, not having ADHD as a population in the validation, may have influenced these results when operationalized by the JT Method.

Regarding the interventions using the Promoting-Children (Falcão & Bolsoni-Silva, 2016) and Promoting-Parents (Bolsoni-Silva & Fogaça, 2018) programs, the adaptations focused on the difficulties posed by the diagnosis in the lives of children, adolescents, and family members cover an important and insufficient dimension in the area, as well as measuring symptomatology using validated instruments. It should be reiterated that the intervention using the Promoting-Parents program (Bolsoni-Silva & Fogaça, 2018), among the adaptations included, has reduced the number of sessions from 14 to seven, showing indicators of the intervention's cost-benefit ratio (American Psychological Association Task Force on Evidence-Based Practice for Children and Adolescents, 2008). Moreover, the inferential analyses and the JT Method reflected convergence for most of the variables considering different instruments and informants, confirming the validity of the data.

The proposed combined approach (psychological intervention for schoolchildren and guardians) had a positive impact on social skills, behavioral problems, and a significant impact on one of the main symptoms of ADHD, hyperactivity, indicating a significant improvement of children and adolescents evidenced by the inferential analysis (Conners Scale and SDQ). Of the seven schoolchildren, six of them achieved the recovered classification by reaching the criteria of Reliable Positive Change (RPC) index and clinical significance (SDQ) obtained by the JT Method. For most of the guardians, there was significant improvement to the children and adolescents attributed to the interventions (children's SS, ESS, context variables and negative educational practices).

Final Considerations

With the aim of verifying the impact of combined psychological interventions on the behavioral repertoire of children and adolescents diagnosed with ADHD and their guardians, using the adapted Promoting-Children and Promoting-Parents programs by means of inferential analysis and the JT Method, this study revealed promising results, contributing to the gap in interventions to promote social skills in Brazil.

It can be inferred from the findings that, in addition to the development of skillful behaviors by the participants, there was a decrease of psychological distress and improvement in interpersonal relationships, attributed to the procedures used, considering the convergence between analyses and instruments. Regarding medication, unlike the literature on the subject showed, the group with combined treatment and pharmacology did not show significant improvement. As a limitation, the present study did not measure the impact on school outcomes and among peers, and it is recommended that future proposals include teachers, so that the gains could be generalized. It is expected that the proposed interventions will contribute to and encourage further studies, especially in the interdisciplinary work of psychologists and social workers operating in the school context, strengthening practices and relationships in line with Inclusive Education and guaranteeing the rights of this population.

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