

Strengths and difficulties questionnaire (SDQ): a study of school children in Ribeirão Preto

Questionário de capacidades e dificuldades (SDQ): um estudo em escolares de Ribeirão Preto

Camilo Ramos Cury and José Hércules Golfeto

Clinical Hospital of the Medical School of Ribeirão Preto of the University of São Paulo. Child Psychiatry Ambulatory. Ribeirão Preto, SP, Brazil

Abstract Objective: The objective of this study is to investigate possible child psychiatric disorders using the strengths and difficulties questionnaire (SDQ).

Method: SDQ is a questionnaire that screens child mental health problems, comprising a total of 25 items divided in five subscales: emotional problems, hyperactivity, relationship, conduct and pro-social behavior, with five items in each subscale. We also used the impact supplement that evaluates the impairment caused by symptoms. Out of 143 children randomly chosen from a public school of Ribeirão Preto, 107 questionnaires were correctly filled in by parents. Teachers received 114 questionnaires (regarding children with parents' consent), and 108 questionnaires were correctly filled in. As a final sample, we obtained 112 questionnaires answered by parents or teachers.

Results: In the questionnaires answered by the parents, we obtained high scorings such as 30.8% for emotional symptoms, 17.7% for conduct disorders, 16.8% for hyperactivity, 14% for interpersonal relationships, 18.7% for the total scores and 10.2% for the impact supplement. Questionnaires answered by the teachers had 1.83% for emotional symptoms, 8.25% for conduct disorders, 8.25% for hyperactivity, 2.75% for interpersonal relationships, 8.25% for the total scoring and 4.58% for the impact supplement. Combining the results obtained from parents and teachers we have diagnostic hypotheses in the frequencies of 7.14% for emotional disorders, 9.82% for conduct disorders, and 12.5% for psychiatric disorder not otherwise specified and no combination was noted between parents and teachers for hyperactivity. Mean age was 8.18 years, with 63% of the children being male and 37% female.

Conclusion: SDQ can be useful for a preliminary screening in the investigation of possible psychiatric disorders in childhood.

Keywords Strengths and difficulties questionair. Child psychiatric disorders. Epidemiology.

Resumo Objetivo: O objetivo deste estudo foi rastrear possíveis transtornos psiquiátricos em crianças por meio da aplicação do questionário de capacidades e dificuldades (SDQ).

Método: O SDQ é um questionário que rastreia problemas de saúde mental infantil, contendo um total de 25 itens divididos em cinco subescalas: problemas emocionais, hiperatividade, relacionamento, conduta e comportamento pró-social, com cinco itens em cada subescala. Foi utilizado também o suplemento de impacto que avalia o comprometimento causado pelos sintomas. Foram sorteadas 143 crianças de uma escola pública de Ribeirão Preto, 107 questionários foram corretamente preenchidos pelos pais. Aos professores foram distribuídos 114 questionários (relativos às crianças cujos pais consentiram), 108 questionários foram corretamente preenchidos. Como amostra final, obtivemos 112 questionários respondidos por pais ou professores.

Resultados: Nos questionários respondidos pelos pais tivemos pontuações elevadas em 30,8% para sintomas emocionais; 17,7% para conduta; 16,8% para hiperatividade; 14% para relacionamentos interpessoais; 18,7% para pontuação total e 10,2% para o suplemento de impacto. Pelos professores tivemos 1,83% para sintomas emocionais; 8,25% para conduta; 8,25% para hiperatividade; 2,75% para relacionamento interpessoal; 8,25% para pontuação total e 4,58% para o suplemento de impacto. Combinando os resultados obtidos de pais e professores, temos as suspeitas de diagnósticos nas frequências de 7,14% para desordens emocionais; 9,82% para

desordens de conduta; 12,5% para desordem psiquiátrica não especificada, sendo que não houve combinação entre pais e professores para hiperatividade. A média de idade foi de 8,18 anos, sendo 63% das crianças do sexo masculino e 37% do sexo feminino.

Conclusões: O SDQ pode ser útil para avaliação preliminar no rastreamento de possíveis transtornos psiquiátricos na infância.

Descritores Questionário de capacidade e dificuldade. Transtornos psiquiátricos da infância. Epidemiologia.

Introduction

Psychiatric epidemiology in childhood is a relatively new research field and has become useful in the last three decades. The Rutter and Achenbach questionnaires have been the most used research instruments for psychiatric epidemiological investigation in childhood. However, new instruments for symptom assessment in childhood are being used, among them the Survey about Children and Adolescents Development and Well-being (DAWBA) and the Strengths and Difficulties Questionnaires (SDQ).¹ The latter is a diagnostic screening instrument for the investigation of the mental health of children and adolescents and was developed by Robert Goodman in 1997. It is composed by 25 items subdivided in five subscales of five items each, measuring hyperactivity, emotional symptoms, conduct problem symptoms, interpersonal relationships and pro-social behavior.²

The SDQ can be self-reported by parents, teachers and children, and there are specific versions for parents asking about children aging three to 16 years, for teachers asking about children aging three to 16 years and one self-reported version for children above 11 years. These versions only differ in some items.³

The extended version of the SDQ, as well as investigating symptoms such as the Rutter and Achenbach questionnaires, also assesses the impairment caused by the symptoms to the children, in their family and school life. The extended version includes the questionnaire with the 25 items plus the impact supplement, which was developed for psychiatric cases that go beyond the presence of symptoms.⁴

Its usefulness has been proved in the clinical management in order to screen probable psychiatric disorders, obtaining the prevalence rate of symptoms commonly present in childhood and adolescence.⁵ It also points out the risk factors which influence the psychosocial well-being of children, as demonstrated in a study⁶ in which factors such as the birth weight have a significant influence in the SDQ score: among boys the lower weight predicts higher hyperactivity and among girls, predicts problems in interpersonal relationships. Additionally, this study reports that a favorable social environment is a predictor of adequate conduct, whereas an unfavorable environment increases the risk for behavioral disorders.

The SDQ has advantageous features: it is easily applied, it

has a compact one-page format, it questions about capabilities ('has a good concentration power' 'is loved by children', 'tries to be attentive') and not only in the children's difficulties. It is also advantageous as a general measuring instrument of the most common signals and symptoms in childhood and adolescence: hyperactivity, conduct problems and emotional problems.⁵

The application of the SDQ in population samples has been effective to detect signals and symptoms when answered by parents, teachers and children. The combination of data from these three informants increases its capability of screening psychiatric disorders.⁷

The questionnaire has been already translated into more than 40 languages, being available in the Internet at www.sdqinfo.com. In our study we used the questionnaire translated into Portuguese, obtained from the Internet, without modifications of available on-line versions. Currently, the Portuguese version is being validated, compared with data obtained with psychiatric interviews both in clinical samples and in the community.⁵

The objective of this study was to apply the SDQ questionnaire in order to screen possible psychiatric disorders in children of public schools in Ribeirão Preto, attempting to define an epidemiological profile in this population.

Methods

We applied the Strengths and Difficulties Questionnaire (SDQ), parent and teacher version and the respective impact supplements (P4-16 e T4-16). The questionnaire has 25 items, divided in cinco subscales: hyperactivity, emotional problems, conduct problems, interpersonal relationship and pro-social behavior. Each item can be answered as 'Not True', 'Somewhat True' and 'Certainly True' receiving punctuations from 0 to 2 for each answer, 'not true' being punctuated as 0 or 2 depending on the template. The punctuation for each of the subscales is obtained adding the punctuations of the five items which compose each subscale, thus generating a punctuation which ranges from 0 to 10. The punctuations in the subscales of hyperactivity, emotional problems, conduct and relationship are added generating a total punctuation of difficulties ranging from 0 to 40. The punctuation of the pro-social scale is not incorporated in the total punctuation of difficulties, as the ab-

sence of pro-social behaviors is conceptually different from the presence of psychological difficulties.⁵ The impact supplement questions whether the child has 'difficulties' and, if positive, asks about their chronicity, about the distress they cause, their interference with the daily routine and about the impairment they cause; its punctuation ranges from 0 to 10 in the version for parents and from 0 to 6 in the version for teachers. We used the cut-off points published in the literature² and available in the Internet at www.sdqinfo.com in order to define 'normal', 'borderline' and 'abnormal' punctuations. In Brazil, cut-off points are similar to those of the United Kingdom.

Sample

One hundred and forty-three children of grades first to fourth, aging six to 11 years old, from a public school of Ribeirão Preto were allotted. Closed envelopes containing the questionnaires were given to children at school, in order to be delivered to their parents or people in charge and answered at home. After the questionnaires were answered the envelopes were returned to the teachers and afterwards to the authors. Each envelope contained the questionnaire, a letter with orientations for the parents and the post-informed consent.

Teachers answered to the questionnaires about the children whose parents had signed the post-informed consent, authorizing them to answer the questionnaire, according to the research ethical rules.

Out of the 143 questionnaires distributed to the children, 24 were not returned and 119 were returned after two weeks. In 114 of them the informed consent was signed, only in five of them it was not signed by the parents, and 7 were incomplete, what prevented to establish a punctuation. The final sample had 107 completed questionnaires with their informed consent.

Teachers received 114 questionnaires (regarding children to whose parents gave their consent). Of these, four questionnaires were not returned, 110 were returned, being two incomplete, having the final sample 108 questionnaires.

As a final sample, combining children who had their questionnaires answered by parents or teachers, we obtained 112 questionnaires.

We used the diagnostic criteria of the ICD-10.

We used the program SPSS for statistical analysis, being considered a significant difference ($p=0.05$) for the chi-square test, Fisher's exact Test, Mann-Whitney non-parametric test for an independent sample, Wilcoxon non-parametric Test for matched samples.

We could not use the computer-based algorithm for the SPSS due to the lack of compatibility of this program which was available in our service.

Results

Among questionnaires answered by parents we obtained 45.8% (49/107) of children with high punctuations, in the abnormal range, being 30.8% (33/107) in the subscale of emotional symptoms, 17.7% (19/107) for conduct problems, 16.8% (18/107) for hyperactivity, 14% (15/107) for interpersonal relationships, 18.7% (20/107) for total punctuation and 10.2%

(11/107) for the impact supplement. Boys composed 63.3% (31/107) of the sample with high punctuations and 37.7% (18/107) were girls. Taking into account the different composition of the sample we found high punctuations in boys (regarding boys) with frequencies of 28.3% (19/67) for emotional symptoms, 16.4% (11/67) for conduct problems, 20.8% (14/67) for hyperactivity, 16.4% (11/67) for interpersonal relationships, 19.4% (13/67) for total punctuation and 8.9% (6/67) for the impact supplement. Among girls we noted high punctuations (regarding girls) with frequencies of 35% (14/40) for emotional symptoms, 20% (8/40) for conduct problems, 10% (4/40) for hyperactivity, 7.5% (3/40) for interpersonal relationships, 17.5% (7/40) for total punctuation and 12.5% (5/40) for the impact supplement.

Among questionnaires answered by teachers we obtained 12.8% (14/108) of children with abnormal punctuations, being 1.83% (2/108) in the subscale of emotional symptoms, 8.25% (9/108) for conduct problems, 8.25% (9/108) for hyperactivity, 2.75% (3/108) for interpersonal relationship, 8.25% (9/108) for total punctuation and 4.58% (5/108) for the impact supplement, being only one (0.92%) for girls and 13 boys (12.03%) punctuated as abnormal by teachers. Taking into account the different composition of the sample we found high punctuations among boys (regarding boys) with frequencies of 28.1% (2/71) for emotional symptoms, 11.2% (8/71) for conduct problems, 12.6% (9/71) for hyperactivity, 2.8% (2/71) for interpersonal relationships, 11.2% (8/71) for total punctuation and 5.6% (4/71) for the impact supplement. Among girls we observed high punctuations (regarding girls) with frequencies of 0% (0/37) for emotional symptoms, 2.7% (1/37) for conduct problems, 0% (0/37) for hyperactivity, 2.7% (1/37) for interpersonal relationships, 2.7% (1/37) for total punctuation and 2.7% (1/37) for the impact supplement.

Combining the results, using the algorithm paper and pencil, obtained from parents, teachers and the respective impact supplements we have frequencies of diagnostic predictions of 7.14% (8/112) for emotional disorders, 9.82% (11/112) for conduct disorders, 12.5% (14/112) for not-otherwise specified psychiatric disorder, and there was no combination between parents and teachers for hyperactivity. 'Not-otherwise specified psychiatric disorder' is obtained adding the punctuations in the subscales of hyperactivity, emotional, conduct and relationship problems which generate the total punctuation of difficulties.

The mean age was 8.18 years (standard deviation ± 1.19 years), 63% ($n=71$) of children being males and 37% ($n=41$) females, regarding the final sample of 112 children with questionnaires answered by their parents or teachers.

In the questionnaire answered by parents we noted that 22.42% (24/107) of the children had a high punctuation only in one subscale and 23.36% (25/107) in two or more subscales, being 14.01% (15/107) in two subscales, 7.47% (8/107) in three and 1.87% (2/107) in four subscales.

For teachers we obtained 4.63% (5/108) punctuating only in one subscale, 5.55% (6/108) in two, 1.85% (2/108) in three and 0.92% (1/108) only in the impact supplement. In Table 1

we observe the distribution of subscales when only one of them was high. According to the parents, the highest punctuation (13.1%) was in the emotional symptoms and according to the teachers, the highest punctuation (2.78%) occurred in the scale of conduct problems.

In Table 2 we observe the frequencies of scales pairs when a child punctuated above the cut-off point in two subscales; we verified that the set of emotional-relationship and conduct-hyperactivity scales were the most punctuated in 3.74% of the cases according to the parents. The conduct-hyperactivity set was the most frequent with a percentage of 2.78% according to the teachers.

In Table 3, where children with high punctuations in three subscales are displayed, we verified a higher frequency in the Emotional-Conduct-Hyperactivity sets, according to the parents (4.67%) and according to the teachers (0.92%) in the Emotional-Conduct-Hyperactivity and in the Conduct-Relationships-Hyperactivity sets.

We observed the means of punctuations in the subscale of hyperactivity at each age, according to parents and teachers and verified a decrease from 4.167 to 3.70 in the mean scores with the increase in the age from six to 10 years, according to the parents, not considering the age of 11 years, as there was only one child with this age. According to the teachers, there was also a decrease in the punctuation with the in-

crease of the age: from 3.0 to 1.44, between six and 10 years.

Table 4 shows the means, standard deviations, and statistical differences in the scores in the SDQ between genders, according to the parents. We observe higher means among girls in the emotional, pro-social and impact scales and there was a significant difference only in the pro-social scale ($p=0.006$). In the hyperactivity, conduct, interpersonal relationships scales and in the sum of the punctuation the means were higher among boys and there was a significant difference only in the hyperactivity scale ($p=0.041$).

Table 5 shows the means, standard deviations, and statistical differences of the SDQ punctuation between genders, according to teachers. There were higher means for girls only in the scale of pro-social behavior, and there was a trend to significance in this scale ($p=0.071$). In the other scales, the punctuation was higher among boys. There was a significant difference in the hyperactivity scale ($p=0.012$) and a trend to significance in the conduct problems scale ($p=0.068$).

Table 6 shows that the punctuation means in each scale were higher according to the parents in all scales, except for the pro-social scale in which the teachers' punctuation was higher, being the difference statistically significant ($p=0.000$ in the emotional, conduct, hyperactivity, relationship and total scales, and $p=0.009$ in the impact supplement) and there was a trend to significance in the pro-social scale ($p=0.059$).

Table 1 - Percentage of subscales with high punctuation, according to the parents and to the teachers, whenever only one subscale had a high punctuation.

	Emotional Symptoms		Conduct Problems		Hyperactivity		Relationships	
Parent report	13.1%	n=14	1.87%	n=2	2.8%	n=3	4.67%	n=5
Teacher report	0%	n=0	2.78%	n=3	1.85%	n=2	0%	n=0

Table 2 - Percentage of subscales pairs with high punctuation according to the parents and to the teachers.

	Emotional+ Conduct		Emotional+ Hyperactivity		Emotional+ Relationships		Conduct+ Hyperactivity		Conduct+ Relationships		Hyperactivity+ Relationships	
Parents	1.87%	n=2	2.8%	n=3	3.74%	n=4	3.74%	n=4	1.87%	n=2	0%	n=0
Teachers	0%	n=0	.92%	n=1	0%	n=0	2.78%	n=3	.92%	n=1	.92%	n=1

Table 3 - Percentage of subscales sets with high punctuation whenever three subscales had high punctuations, according to the parents and to the teachers.

	Emotional+ Conduct+ Hyperactivity		Emotional+ Relationships+ Hyperactivity		Emotional+ Conduct+ Relationships		Conduct+ Relationships+ Hyperactivity	
Parent report	4.67 %	n=5	.93%	n=1	.93 %	n=1	.93%	n=1
Teacher report	.92%	n=1	0%	n=0	0%	n=0	.92%	n=1

Table 4 - Medians, maximum and minimum values, means, standard deviations and statistical differences of SDQ punctuations between genders, according to the parents.

Gender		Emotional	Conduct	Hyperactivity	Relationships	Pro-social	Total	Impact
Male	Median	3.0	2.0	3.0	2.0	8.0	11.0	0
	Maximum	10.0	9.0	10.0	6.0	10.0	29.0	4.0
	Minimum	0	0	0	0	0	0	0
	S	2.6683	2.0459	2.8785	1.6038	1.8846	6.9081	.9587
Female	Median	4.0	1.0	3.0	2.0	9.0	10.0	0
	Maximum	10.0	8.0	9.0	7.0	10.0	28.0	6.0
	Minimum	0	0	0	0	4.0	0	0
	S	2.5165	2.3685	2.6154	1.6869	1.7080	7.5140	1.2606
p		.333	.519	.041	.273	.006	.470	.375

Table 5 - Medians, maximum and minimum values, means, standard deviations and significant differences of SDQ punctuations between genders, according to the teachers.

Gendgr		Emotional	Conduct	Hyperactivity	Relationships	Pro-Social	Total	Impact
Male	Median	1.0	0	2.0	0	10.0	4.0	0
	Maximum	7.0	8.0	9.0	6.0	10.0	24.0	3.0
	Minimum	0	0	0	0	2.0	0	0
	S	1.7887	1.7840	2.8511	1.5341	2.3389	6.5035	.6024
Female	Median	1.0	0	0	0	10.0	2.0	0
	Maximum	5.0	5.0	5.0	7.0	10.0	18.0	2.0
	Minimum	0	0	0	0	5.0	0	0
	S	1.6094	1.1456	1.5977	1.5349	1.6631	4.4994	.4191
p		.888	.068	.012	.333	.071	.099	.514

Tabl 6 - Medians, maximum and minimum values, standard deviations and statistical differences of SDQ punctuations according to the parents and to the teachers in each scale.

		Emotional	Conduct	Hyperactivity	Relationships	Pro-social	Total	Impact
Parent report	Median	3.0	2.0	3.0	2.0	8.0	10.0	0
	Maximum	10.0	9.0	10.0	7.0	10.0	29.0	6.0
	Minimum	0	0	0	0	0	0	0
	S	2.6074	2.1611	2.8235	1.6333	1.8632	7.1256	1.0756
Teacher report	Median	1.0	0	1.0	0	10.0	4.0	0
	Maximum	7.0	8.0	9.0	7.0	10.0	24.0	3.0
	Minimum	0	0	0	0	2.0	0	0
	s	1.7191	1.6012	2.5686	1.5308	2.1547	5.9538	.5434
P		.000	.000	.000	.000	.059	.000	.009

Discussion

The objective of this study was to screen possible psychiatric disorders, using the SDQ, among children of a public school of Ribeirão Preto. Studies⁵ based on the SDQ indicate agreement with the clinical assessment performed by experienced psychiatrists. We also know that when careful diagnostic criteria are used studies point out more similarities than differences, such as: a Brazilian study using the DSM-IV to diagnose ADHD found a 5.8% prevalence, very similar to the results found in other countries.⁸ Therefore, we think that the percentage of high punctuations found among children in our study can be near to the real prevalence of these disorders in this population.

We noted that the frequencies found in this study – 30.8% for emotional symptoms, 17.7% for conduct problems, 16.8% for hyperactivity and 18.7% for the total punctuation – are very close to the frequencies obtained at the Gaza Strip:⁹ 34.9% for emotional symptoms, 22.7% for conduct problems, 8.5% for hyperactivity and 14.2% for the total punctuation, according to the parents' punctuations, and there was a significant statistical difference only in the hyperactivity subscale (p=0.02, chi square test). In other subscales there were no significant differences. Of note, these results do not take into account the punctuation of the impact supplement, which was not applied in the Gaza Strip.

A great percentage (34.9) of children with high punctuations in the emotional symptoms was found in the Gaza Strip.⁹ These results were attributed to the cultural differences in the parents' perception concerning some items of the questionnaire, compared to parents of developed countries. This study also related this fact to the complexity to translate the questionnaire, which requires a validation at each culture. In our study we found similar questionings regarding the cultural differences between the children of the assessed school and those of samples

of other studies in developed countries; and also regarding the validation of the questionnaire (which is being performed), what shows the limitations of this survey. Other limitation was the absence of a clinical diagnosis or of other scale to measure signals and symptoms.

It was noted in Bangladesh¹⁰ that 8.6% of the children had high punctuations for emotional symptoms, 3.1% for conduct problems, 6.2% for hyperactivity and 13.0% for the total punctuation and in the United Kingdom⁷ an abnormal total punctuation was observed in 10.5% of the sample. Of note, in the results found in Bangladesh¹⁰ the cut-off points used were not the same used in our study.

We should highlight the proposal of the simple algorithm 'paper-and-pencil'¹⁰ which can be easily used by mental health services with scarce financial resources and without access to the computer-based algorithm for the SPSS, that is our case. This algorithm proposes the hypothesis of emotional, behavioral disorders or any psychiatric disorders whenever high punctuations are reported by only one informant in the respective subscale together with an increased punctuation of the impact supplement. It proposes the hypothesis of hyperactivity whenever it occurs in at least two informants in the hyperactivity subscale, together with an increased punctuation in the impact supplement.

We reached to this model by observing that the scales which discriminate better between community samples and a psychiatric clinic sample were the scales for emotional, hyperactivity, conduct problems and the impact supplement. As the clinical diagnosis for hyperactivity requires symptoms in two environments or more, the hypothesis of hyperactivity of the SDQ demands a high punctuation by at least two informants.

The combination of results of the questionnaires of parents with that of teachers has a higher sensitivity to predict diag-

noses than when we observe separately results of parents or teachers.⁷ The prediction is still better when we take into account the questionnaires answered also by children aged more than 11 years. Using thus the proposal of the algorithm 'paper-and-pencil' and combining the results obtained by parents, teachers and the respective impact supplements we reached to frequencies of diagnostic hypotheses of 7.14% (8/112) for emotional disorders, 9.82% (11/112) for behavioral disorders, 12.5% (14/112) for not-otherwise specified psychiatric disorder, and there was no concordance between parents and teachers for hyperactivity. These data did not differ significantly from what was found in Bangladesh¹⁰ using multi-informants (parents, teachers and children): 10.5% (17/162) for emotional disorders, 5.6% (9/162) for behavioral disorders, 3.1% (5/162) for hyperactivity and 17.9% (29/162) for any not-otherwise specified psychiatric disorder.

Of note, in our study no child met all criteria for hyperactivity according to the algorithm 'paper-and-pencil'. This can be explained by the low number of questionnaires with high punctuation for the impact supplement - according to the teachers, only 3.7% of answered questionnaires (4/108) -, and due to the fact that the percentage punctuated as abnormal in the hyperactivity scale reported by teachers is lower than that punctuated by the parents as statistically significant, as shown in Table 6.

The difference in the punctuation of the scales between parents and teachers, shows the lack of concordance between the several informants about the presence of symptoms in a same subject, a finding that has been already reported in other publications Table 6.¹ Other example, the prevalence of hyperactivity among boys aged 4 to 11 years was 2.15% according to the parent report, but according to the teachers this rate increased to 7.2%.¹¹

Comparing genders, we noted that boys had higher punctuations than girls, especially in the hyperactivity subscale, what was significant, in the report of parents and teachers (Tables 4 and 5). Boys had higher scores not only through their means, but also verifying the number of boys punctuated as abnormal, higher than that of girls (63.3% against 37.7%). Some studies,^{12,13} show that girls are underdiagnosed as they have fewer symptoms of aggressiveness/impulsiveness, lower rates of conduct disorder, high comorbidity with mood and anxiety disorders, and thus their age of diagnosis tends to be higher than among boys. In a screening study of child psychiatric disorders in the community⁷ it was found that false positive were more likely to occur in males than females. Would these cases explain the higher punctuation among boys in this study? Or would it be because girls are underdiagnosed? The punctuation was higher in boys than in girls in the conduct, relationships, hyperactivity and total scales, reaching significance only in the hyperactivity scale.

We observed higher means among girls only in the emotional, pro-social and impact scales. There has been a trend to a significant difference in the pro-social behavior scales.

Age was significantly associated to the decline in the total ADHD symptoms,¹⁴ and what was verified with the SDQ was

a slight decrease in the punctuation of hyperactivity between 6 and 10 years, ranging from 4.1 to 3.7 in the mean of punctuations according to the parents, while according to the teachers such decline ranged from 3.0 to 1.4.

We also verified the high frequency of children with high punctuations in more than one scale, according both to parents and teachers (Tables 2 and 3). What may represent a child with high punctuation in several scales? Would a difficulty of translation be responsible for representing several constructs in a same item of the questionnaire? Would they be comorbidities? Would they be children with more severe impairment? The SDQ found ¾ of children with clinical diagnosis of depression and the prediction of these cases was more frequent in the conduct than in the emotional scale.⁷ We have not found other studies discussing the fact that children may punctuate high in more than one subscale, what may be due to the fact that this questionnaire is recent and that there are scarce available data about this issue. Due also to the fact that few studies use the SDQ, we had difficulties to compare our results with those of other countries. For example, some studies are focused on the validation of the self-reported version,³ others on the validation of the impact supplement,⁴ or focus in the specificity of 94.6% and sensitivity of 63.3%,⁷ without divulging the frequencies found in each subscale.

A Brazilian study which used the SDQ¹⁷ found that poverty, maternal psychiatric disorder and family violence were strongly associated to high rates of probable child psychiatric disorder, but in this case we also could not compare our data as we could not obtain these social indicators in our study.

Epidemiology in psychiatry is very complex, due to the innumerable variables and biases found in studies about human behavior, that can lead to other uncountable formulations of epidemiological hypotheses, differently from other medical areas, such as infectology. But the epidemiological research in psychiatry had a great breakthrough with the possibility of increasing the capacity of databases and the creation of new computer-based techniques for statistical analyses. Epidemiology in psychiatry should develop more accurate research techniques to detect the uncountable possibilities of the developing human being.^{15,16} This study agrees with this perspective as it uses a new research instrument.

Conclusions

The SDQ can be useful for the preliminary screening of possible psychiatric disorders in childhood, as there are few significant differences found in our study compared to the other studies in the literature. We think that these few differences can be adjusted with the definition of specific cut-off points for our society, besides the finishing of the validation of the questionnaire for our population.

We found the same difficulties for a epidemiological study in our country due to the difficulty to obtain questionnaires of teachers about the mental health of their students, to the lack of concordance between the several informants about the presence of symptoms in a same subject.

References

1. Fleitlich B, Goodman R. Epidemiologia. Rev Bras Psiquiatr 2000; 22 Suppl 2:SII2-SII6.
2. Goodman R. The strengths and difficulties questionnaire: a research note. J Child Psychol Psychiatry 1997;38:581-6.
3. Goodman R, Meltzer H, Bailey V. The strengths and difficulties questionnaire: a pilot study on the validity of the self-report version. Eur Child Adolesc Psychiatry 1998;7(3):125-30.
4. Goodman R. The extended version of the strengths and difficulties questionnaire as a guide to child psychiatric caseness and consequent burden. J Child Psychology Psychiatry 1999;40:791-801.
5. Fleitlich B, Cortázar PG, Goodman R. Questionário de capacidades e dificuldades (SDQ). Infanto Rev Neuropsiq Inf Adol 2000;8:44-50.
6. Kelly YJ, Nazroo JY, McMunn A, Boreham R, Marmot M. Birthweight and behavioural problems in children: a modifiable effect? Int J Epidemiol 2001;30:88-94.
7. Goodman R, Ford T, Simmons H, Gatward R, Meltzer H. Using the strengths and difficulties questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. Br J Psychiatry 2000;177:534-9.
8. Rohde LA, Biederman J, Busnello EA, Zimmermann H, Schmitz M, Martins S, et al. ADHD in a school sample of Brazilian adolescents: a study of prevalence, comorbid and impairments. J Am Acad Child Adolesc Psychiatry 1999;38:716-22.
9. Thabet AA, Stretch D, Vostanis P. Child mental health problems in Arab children: application of the strengths and difficulties questionnaire. Int J Social Psychiatry 2000;46:266-80.
10. Mullick MSI, Goodman R. Questionnaire screening for mental health problems in Bangladeshi children: a preliminary study. Soc Psychiatr Epidemiol 2001;36:94-9.
11. Fleming JE, Offord DR, Boyle MA. Prevalence of childhood and adolescent depression in the community. Ontario Child Health Study. Br J Psychiatry 1989;155:647-54.
12. Cantwell DP. Attention deficit disorder: a review of the past 10 years. J Am Acad Child Adolesc Psychiatry 1996;35(8):978-87.
13. Biederman J, Faraone SV, Mick E. Clinical correlates of ADHD in females: findings from a large group of girls ascertained from pediatric and psychiatric referral sources. J Am Acad Child Adolesc Psychiatry 1999;38:966-7.
14. Biederman J, Mick E, Faraone SV. Age-dependent decline of symptoms of attention deficit hyperactivity disorder: impact of remission definition and symptom type. Am J Psychiatry 2000;157:816-8.
15. Golfeto JH, Barbosa GA. Epidemiologia. In: Rodhe LA, Mattos P, editors. Princípios e práticas em transtorno de déficit de atenção/hiperatividade. Porto Alegre: Artmed; 2003. p. 15-33.
16. Filho NA, Rouquayrol MZ. Introdução à epidemiologia moderna. 1ª ed. Rio de Janeiro: Apce Abrasco; 1990.
17. Fleitlich B, Goodman R. Social factors associated with child mental health problems in Brazil: cross sectional survey. BMJ 2001;15:599-600.

Correspondence:

José Hércules Golfeto
Av. Nove de Julho, 980
14025-000 Ribeirão Preto, SP, Brazil
E-mail:jhgolfet@fmrp.usp.br
