

Children Mental Health Problems: Parent Report Form of Strength and Difficulties Questionnaire

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Objective: This study was performed to evaluate the mental health status of 6 – 11 year-old children of Tehran in a community-based sample using the Persian version of the Strength and Difficulties Questionnaire (SDQ) Parent-report.

Method: Parents of 799 children (6 to 11 years old) were selected from 250 clusters of the entire 22 municipality areas of Tehran; they responded to 25 questions of the Persian version of SDQ parent-report form. The mean score in each subscale and the frequency of each symptom domains based on the Goodman's cutoff points, were determined.

Results: The prevalence of symptom domain was relatively high. Among the studied children, 25.8% had total score equal to 17 or more. The most frequent problem domain was conduct. The studied boys had statistically significant higher mean scores in hyperactivity and peer problem subscales.

Conclusion: Frequency of all the problem symptom domains was high in children from different urban areas of Tehran. Further evaluation for the reason of such a high frequency is necessary.

Key Words: *The Strength and Difficulties Questionnaire (SDQ), Children, psychopathology, screening, behavioral problem.*

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Social, Cultural, political, and economical changes may have an effect on life style and physical and mental health of children and adolescents (1). Emotional and behavioral problems among children and adolescents populations cause significant distress in children and their families and have potential economic and social impacts on their lives (2, 3). Child and adolescent psychiatric disorders are highly prevalent (3) and can co-occur significantly with other morbidities in children, including poor school performance, chronic health problems (4) or amplifying the present medical problems (5), substance misuse and suicidal behaviors (4).

Psychiatric community studies are essential for the planning and development of psychiatric services, as well as being helpful in examining the socio-demographic correlates of mental disorders in a given community (5). In different Studies on the prevalence of child and adolescent psychiatric disorders in different parts of the world, reports on the frequency of these disorders were very diverse. For example in a study by Suzuki, Morita and Kamoshita, 14.8% of the adolescents had at least one diagnosable psychiatric

disorder at the beginning of high school (6). In a study at 2001, Abou-Saleh, Ghubash, and Daradkeh reported that the frequency of ICD-10 psychiatric disorders were equal to 8.2% (7). In four studies in India, Columbia, Philippines, and Sudan, the prevalence of psychiatric disorders reported to be equal to 12% to 29% (8). In another study in the United States, it has been reported that 5% of 7-14 year- old children had significant behavioral or emotional difficulties that affected their functioning, family life, friendship, learning, or leisure activities (2). In another study from Norway, it was reported that although one third of the children reported minor perceived difficulties, about 5% had definite or severe problems (9).

Structured diagnostic interviews are now widely used in adult psychiatry, in the fields of clinical trials, epidemiological studies, academic research as well as clinical practice. These instruments improved the reliability of the data collection and interrater reliability allowing greater homogenization of the subjects taking part in clinical research which is an essential factor to ensure the reproducibility of the results. A few instruments have been developed to screen emotional and behavioral problems and mental disorders using questionnaire methods (10).

Iran, as a developing country, is undergoing significant social, cultural, and economic changes that all can influence its mental health status. According to recent surveys Iran has a population of about 70 million. More than 20% of this population is younger than 20 years old; and some of them suffer from psychiatric disorders and need mental health services. Unfortunately, there are no estimations on the prevalence of child and adolescent psychiatric problems in Iran. The only available data are from small-sized available samples that lack enough reliability (11).

Considering the above-mentioned facts and considering that SDQ could be a valuable screening instrument for child and adolescents psychiatric disorders in many different countries (12-16), the researcher decided to evaluate the prevalence of different problem domains using the Persian version of the parent-report form of SDQ in a community-based sample of 6 to 11 year- old children of Tehran's urban areas.

Materials and Method

Participants

The cases were selected using multistage, cluster sampling method. The studied population included all the children between 6 to 11 years of age in all the 22 municipality areas of Tehran. The cases from 250 clusters were selected randomly from all the 22 municipality areas of Tehran based on their population, proposed by Iran National Statistics Organization. The locations and directions of moving in the course of samplings were defined exactly using a detailed 1:14000 map of Tehran.

Study design

The cases were selected from each cluster from both sexes among each age group (6-8, and 9-11 years). The cases were selected by one of the 6 teams consisted of two clinical psychologists (or senior students of clinical psychology, of both sexes) using the sampling protocol of the study. The clinical psychologists were instructed to complete the SDQ by a fellow of child and adolescent psychiatry and achieved high inter-rater reliability after completing 5 questionnaires by the presence of the fellow of child and adolescent psychiatry in 3 consecutive sessions. They were also instructed for the sampling protocol and detailed locations of the clusters.

After describing the objectives of the study to the parents of children and obtaining their oral consent, the examiners filled out parent-report form of SDQ for each case. If there were any complaints about probable psychopathologies, they were instructed to refer to one of the child and adolescent psychiatrists collaborating in the study. The first session of the treatment was free of charge. The cases with scores over the previously determined and validated cutoff points for total score by Goodman (13) and each of the subscales of SDQ were determined. In the case of any deficiency in the

SDQ answer sheet, the case was excluded from the study. Finally 799 children enrolled in the study.

Instrument

The strength and difficulties questionnaire (SDQ) is a structured questionnaire that is used for screening the child and adolescent psychiatric problems and contains 25 questions that consist 5 subscales including emotional, hyperactivity, relationship, and conduct problems and pro-social behaviors with 5 items in each. The sum of the first four subscales consist the total difficulty score (13). The questionnaire has 3 forms: parent-report, teacher-report and self-report. The parent report form was used in the present study. Psychometric properties of the Persian version of SDQ were determined beforehand and its reliability and validity were confirmed in those studies (17, 18).

Statistical analysis

To evaluate the probable relationships between the demographic factors and subscale scores, T-student, Chi square and Pearson correlation tests were used when appropriate. The statistical analyses were done using SPSSWin 15.0 (release 15.0). Significance levels determined to be equal to 0.05.

Results

The present study is a descriptive-analytical one that was conducted on the 6 to 11 year- old children in all the 22 municipality areas of Tehran during 2007. Parents of 799 children responded to the questions of the parent-report form of SDQ completely.

The mean age of the participants was 8.9 ± 1.4 years. Among the 799 participants, 391 (48.9 percent) were male and the remaining were female. There were not any statistically significant differences between the mean age of male and female participants (Table 1).

The mean total problem score in the studied cases was equal to 12.3 ± 6.6 (ranged from 0 to 37). The difference involving the mean total problem score between male and female participants was not statistically significant (Table 1). The mean scores in each of the SDQ subscales and their sex differences are shown in Table 1. There were significant differences between sexes only in hyperactivity and peer problem scores of SDQ. The boys had more hyperactivity and peer problems. The prosocial behavior subscale score was higher in girls but the difference was not statistically significant. The scores of the participants in the hyperactivity subscale decreased with age ($r = -0.085$; $P < 0.05$), but the scores in the other subscales did not.

Among the studied children, 443 (55.4 percent) had scores above the cutoff points in at least one of the subscales. There were not any statistically significant differences between sexes regarding the above mentioned frequency.

Among the studied children, 206 (25.8 percent) had total problem scores higher than Goodman's cutoff

Table 1. Comparison of total and sub-scale scores for the SDQ self-report version between genders.

Subscales	Total Mean (SD)	Male Mean (SD)	Female Mean (SD)	Significance (between sexes)
Emotional problem	2.6 (2.4)	2.5 (2.2)	2.6 (2.5)	NS
Conduct problem	3.0 (2.4)	3.0 (2.3)	3.0 (2.5)	NS
Hyperactivity	4.4 (2.6)	4.7 (2.6)	4.1 (2.6)	0.001
Peer problem	2.3 (1.7)	2.4 (1.8)	2.2 (1.6)	0.037
Total difficulty	12.3 (6.6)	12.7 (6.5)	11.9 (6.7)	NS
Prosocial behavior	8.3 (1.7)	8.2 (1.8)	8.4 (1.7)	NS

Table 2. Frequency of the cases that had scores equal to or more than cutoff points.

Subscales	Cutoff point	Total N (%)	Male N (%)	Female N (%)	Significance (between sexes)
Emotional problem	5	168 (21.0)	75 (19.2)	93 (22.8)	NS
Conduct problem	4	282 (35.3)	134 (34.3)	148 (36.3)	NS
Hyperactivity	7	173 (21.7)	94 (24.0)	79 (19.4)	NS
Peer problem	3	179 (22.4)	97 (24.8)	82 (20.1)	NS
Total difficulty	17	206 (25.8)	107 (27.4)	99 (24.3)	NS
Prosocial behavior	4	12 (1.5)	9 (2.3)	3 (0.7)	NS

Table 3. Correlations between scores of different SDQ subscales in the participants of the study.

Subscales	Prosocial behavior	Total problem	Peer problem	Hyperactivity problem	Conduct problem	Emotional problem
Emotional Problem	-.167*	.756*	.367*	.423*	.372*	1
Conduct problem	-.347*	.766*	.223*	.541*	1	.372*
Hyperactivity problem	-.224*	.792*	.197*	1	.541*	.423*
Peer problem	-.160*	.543*	1	.197*	.223*	.367*
Total problem	-.315*	1	.543*	.792*	.766*	.756*
Prosocial behavior	1	-.315*	-.160*	-.224*	-.347*	-.167*

* Correlation is significant at the 0.01 level (2-tailed).

points. There were not any statistically significant differences between sexes regarding frequency of children with high total problem scores.

The most frequently observed problem domain was conduct subscale in which 282 children (35.3 percent) had scores higher than Goodman's cutoff points (Table 2).

There were not any statistically significant differences between sexes on the frequency of children with high problem subscales scores. Only 12 (1.5 percent) children had low prosocial behavior subscale score.

There was a significant negative correlation ($r=-0.085$) between the scores of the participants in the

hyperactivity subscale and their age ($P<0.05$); i.e., the hyperactivity score decreased with age increase. There were not any statistically significant positive or negative correlations between the age and total problem score or scores in the other subscales.

The correlation between the total problem score and the scores in different subscales and between the subscales were evaluated. There were statistically significant correlations between the total problem score and all the subscales of problem behaviors (Table 3). The scores in problem behaviors had a positive correlation with each other too. The scores in problem

behaviors had a negative correlation with total problem score and problem behavior subscales.

Discussion

The present study was conducted as a part of a larger nationwide study. In the present study, the prevalence of different problem domains was evaluated in a community sample of Tehran children according to SDQ.

There were not any statistically significant differences regarding age distribution of the studied children in either sex. This makes the comparisons between the sex groups possible.

The mean total problem score in the studied children was comparable with the reports from UK (19) but it was higher than the reports from Norway or Finland (9), Germany (20) or Nordic countries (21). Considering that the Persian version of SDQ is a valid and reliable screening tool (17, 18), these differences can be related to cultural diversities in the target populations of these societies.

The observed differences between boys and girls on the hyperactivity and peer problem subscales are expected. In different studies it has been noted that with the available criteria, prevalence of hyperactivity is more prevalent in boys because they tend to act out and externalize their behaviors. However, girls have a tendency to internalize their problems and less behavioral problem may be observed in this group.

The frequency of high scores in the total problem and problem behavior subscales was surprisingly high. It was estimated that about 10% of each population of children have scores above the determined cutoff points, but this ratio reach to about one half for the total problem scale and one third for conduct subscale in the present study. This unexpectedly high frequency can be a real factor that causes major concerns about the mental health of children in the urban areas of Tehran; or it may be due to differences in the definitions of problem behaviors in our community. However, the later explanation does not seem to be justified as it has been shown that the Persian version of SDQ is a valid and reliable measure with acceptable psychometric properties. The rapid pace of cultural changes in Iran as a developing country and the ongoing shifts in the socio-cultural behaviors may be other factors that cause some behaviors that may be seen as problematic.

The observed negative correlation between the age and score in the hyperactivity subscale is a predictable finding. It is shown that observable manifestations of ADHD (including hyperactivity) decrease with age increase. On the other hand, the hyperactivity changes into a subjective sense of restlessness that could not be observed by the parents (who answered to SDQ in this study).

There were also significant correlations between scores in different subscales. It is predictable for the total problem score to have significant correlations with its constituting problem behavior subscales. However, the

observed correlation between different problem behaviors could be due to the existing overlap between different symptom dimensions of SDQ or co morbidity of the conditions that can cause a rise in the scores of various subscales. On the other hand, the observed negative correlations between the prosocial behavior score and various problem behavior scores were also unsurprising. It can be predicted that children with more emotional, conduct, hyperactivity, or peer problem have less socially acceptable behaviors

Limitations

The present study was performed using only the parent-report version of SDQ. This may cause some bias in the reported results. The next phases of the study are underperformance with the follow up of the same cases and comparing the results through clinical interviews.

The sampling method that was done by direct interview of the parents at their homes may cause a bias in the visiting parents that remain in their homes. This may cause a selection bias in the participants.

To avoid probable problems about reading the questions, SDQ was read for the respondents and they answered the questions orally.

Conclusion

The results of the present study raise some concerns about the high frequency of problem behaviors among children in Tehran. Specific studies to evaluate the frequency of specific symptoms and disorders, especially disruptive behavior disorder are necessary.

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