

Psychological Problems in Iranian Adolescents: Application of the Self Report Form of Strengths and Difficulties Questionnaire

Mohammad Reza Mohammadi,
MD¹

Soroor Arman, MD²

Javad Khoshhal Dastjerdi, PhD³

Maryam Salmanian, Msc¹

Nastaran Ahmadi, Msc¹

Ahmad Ghanizadeh, MD⁴

Ali Alavi, MD⁴

Ayyoub Malek, MD⁵

Heydar Fathzadeh Gharibeh,
PhD⁵

Fatemeh Moharreri, MD⁶

Paria Hebrani, MD⁶

Ali Motavallian, PhD⁷

1 Psychiatry and Psychology
Research Center, Roozbeh
hospital, Tehran University of
Medical Sciences, Tehran, Iran

2 Behavioral Sciences Research
Center, Isfahan University of
Medical Sciences, Isfahan, Iran

3 Department of Geography,
Geographic Sciences and
Planning Faculty, University of
Isfahan, Isfahan, Iran

4 Research Center for Psychiatry
and Behavioral Sciences, Shiraz
University of Medical Sciences,
Shiraz, Iran

5 Clinical Psychiatry Research
Center, Tabriz University of
Medical Sciences, Tabriz, Iran

6 Psychiatry and Behavioral
Sciences Research Center,
Mashhad University of Medical
Sciences, Mashhad, Iran

7 Deputy of Research, Iran
University of Medical Sciences,
Tehran, Iran

Corresponding author:

Nastaran Ahmadi, Psychiatry and
Psychology Research Center,
Roozbeh Hospital,
Tehran University of Medical
Sciences, South Kargar Street,
Tehran 1333795914, Iran.

Tel: +98 21 55413540

Fax: +98 21 55421959

Email: ahmadi.psy@gmail.com

Objective: The aim of the present study was to investigate the epidemiology of psychological problems in adolescents in five provinces of Tehran, Khorasan Razavi, Isfahan, East Azerbaijan and Fars in Iran.

Methods: In the present cross-sectional and descriptive – analytical study, 5171 adolescents aged 12 to 17 years were selected through multistage cluster sampling method from Tehran, Isfahan, Fars, Khorasan Razavi and East Azarbaijan provinces. The self-report form of Strengths and Difficulties Questionnaire (SDQ) was used to obtain the demographic data of each adolescent. Descriptive analysis and 95% confidence interval were used to investigate the relationship between scores of the SDQ questionnaire and demographic factors.

Result: Based on the results, the highest prevalence of psychological problems in the five provinces was related to conduct problems (24%), and the lowest prevalence was related to social problems (5.76%). Also, comparison of 95% confidence interval of prevalence of psychological problems between the two genders suggested a significant difference only in emotional problems of the self-report version of the SDQ between the two genders. The result revealed no significant difference in the psychological problems of the self-report version of the SDQ between the two age's groups and between the middle and high school graduates ($p \leq 0.05$). Among the 5 provinces, Fars allocated the highest rates of conduct problems (28.4), hyperactivity problems (21.5%) and overall criterion problems (17.3%); Esfahan had the highest rates of emotional problems (9.1%) and problems with peers (8.1%); and Khorasan Razavi had the highest rates of social problems (7.6%).

Conclusion: In this study, the highest prevalence of psychological problems in the five provinces was related to conduct problems, and the lowest prevalence was related to social problems. It was determined that girls have more emotional problems than boys. Also, no significant difference was found in the psychological problems of 12 to 14 and 15 to 17 year old adolescents or between middle and high school graduates. In the current study, the prevalence of psychological problems in adolescents in the urban population in Fars province was higher than expected.

Keywords: *Strengths and Difficulties Questionnaire (SDQ), Adolescents, Emotional and behavioral problems, Iran*

Iran J Psychiatry 2013; 8:4: 152-159

Epidemiology provides a perspective on the general health of the population, including the causes and course of their disease (1). When the first study of psychiatric problems in children was done in the

world, most developed countries conducted similar studies to explore the prevalence rates and risk factors of psychiatric problems in children. In developing countries, child psychiatry is still in the

early epidemiological studies of mental problems; and in Iran, most of these studies have been limited by sample size (2-4) or have investigated specific problems (5-8).

Methodological weaknesses of epidemiological studies have made difficult the conclusion of many studies. The results of these studies are obtained using parental evaluation criteria, nonstandard methods, low sample volumes, wide confidence intervals and, they are often based on available samples.

Several studies have reported the frequency of psychological problems in adolescents. For example, in a study on the prevalence of ADHD in preschool children conducted in Mashhad, 12.3% of the children who were assessed using the Conners Scale and the K-SADS-PL were diagnosed as ADHD (6).

In another study, the most frequently observed disorders were different types of phobic disorders, ADHD and anxiety disorders (4).

In a study in Gonabad, it was found that 17% of children were diagnosed with conduct problem and 9% with hyperactivity problems. The frequency of these problems was associated with gender, socioeconomic status and a family history of psychiatric problems (9). In a study conducted by Ghaffarinejad on social phobia, the frequency of this problem in Kerman was equal to 6.4%, which was higher than the rate reported by other sources (10).

In a recent study by Alavi et al. (2008) on the prevalence of psychiatric problems in children 6 to 11 years of age in Tehran, the overall prevalence of these problems were reported to be 17.9 using the SDQ questionnaire and the K-SADS-PL. Hyperactivity problems, oppositional defiant problem and separation anxiety were accounted for the highest frequency with 8.6, 7.3 and 5.9 percent, respectively. In this study, no significant difference was observed between the genders in psychiatric problems; however, bedwetting in boys and anorexia nervosa in girls were reported more than their opposite sex (11). The aim of the present study was to investigate the epidemiology of psychological problems in adolescents in the five provinces of Iran: Tehran, Khorasan Razavi, Isfahan, East Azerbaijan and Fars.

Material and Methods

Participants

In the present cross-sectional and descriptive – analytical study, 5171 adolescents aged 12 to 17 were selected by multistage cluster sampling method from Tehran, Isfahan, Fars, Khorasan Razavi and East Azarbaijan provinces. It is noteworthy to mention that the population of these five provinces is equal to half of Iran's population. In this way, first among all the urban areas in the five provinces of the country, in collaboration with the Statistical Center of Iran, 250 cluster heads were selected randomly and proportional

to the population of each city. Adolescents with mental retardation and severe physical illness were excluded.

Each adolescent completed the self-report form of the Strengths and Difficulties Questionnaire (SDQ). Also, demographic data (gender, age, province of residence and education) and information about the parental education and occupation was obtained. The time required for completing the strengths and difficulties questionnaire (SDQ) was about 15 to 20 minutes. Those participants who had a score above the defined cutoff point in one of the subscales of SDQ or in the overall scale were regarded as suspicious and were considered for further evaluation.

Measure

The Strengths and difficulties questionnaire (SDQ): SDQ is a short questionnaire that can be completed by parents and teachers of 4 to 17 year-old children and 11 to 17 year old children by themselves (12-14). With the help of this questionnaire and related algorithms, three types of problems can be predicted: conduct problem, attention deficit hyperactivity problem and anxiety – depression problem. Generally, predictions related to these three categories of problem can help predict the presence of psychiatric problems in children (12).

This questionnaire consists of 25 questions. For each question, the participant fills one of these answers: "not true", "slightly true" and "certainly true". The questions are awarded scores of 0, 1 or 2. The score of 1 is given to the answer of "rather true"; however, for the answers of "not true" and "certainly true" depending on whether the question asks about a weakness or a strength, the scores of 0 or 2 are given. High scores in the overall scale or any subscale (except the subscale of being social) indicate a high probability of abnormalities and require further investigation. Low scores on each subscale do not exclude the existence of psychiatric problems (15).

In the case of young children, parent reports are more valid than self-reports of children, but in adolescents, parents are not aware of their children's emotional condition. Therefore, the self-report version of the SDQ is designed for 11 to 17 year old adolescents.

Goodman and et al. (2000) reported the sensitivity of 63.3% and specificity of 94.6% for the multi informant (parents, teachers, 12-17 years old children) SDQs. They found that the SDQs can identify over 70% of children and adolescents with conduct, hyperactivity, depressive and some anxiety problems. None the less, the SDQs can classify less than 50% of the adolescents with specific phobias, separation anxiety and eating problems (12). Goodman (1997) found the satisfactory reliability of the SDQ as the mean internal consistency, and the mean retest stability after 4 to 6 months was 0.73 and 0.62, respectively (15). In another study, he reported a specificity of 80 % and a sensitivity of 85% for the SDQs (14).

This scale has been normalized in Iran, and the reliability and validity of its Persian version has been approved. Tehrani Doost et al. (2009) measured the psychometric properties of the Persian version of the

SDQ in 600 Iranian children aged 6-12 years. They reported 0.73 and 0.69 as the mean of internal consistencies for the parent and teacher report forms of the SDQ; also, they found good concurrent validity as there were high significant correlations between the SDQs and CBCL subscales. This research found the cut-off points of the Persian version of the SDQ to be almost similar to those of other studies (4).

Ghanizadeh et al. (2007) evaluated the validity and reliability of the Persian version of the SDQs in 756 children and adolescents aged 3-18 years. They reported 0.73, 0.73 and 0.74 for the parent, teacher and self-report forms of the SDQ as the mean Cronbach's alpha coefficient of the total difficulties; they also obtained a sensitivity of 90% and a specificity of 67%. Overall, their findings showed that the Persian version of the SDQs has acceptable to good psychometric properties (16).

Data Analysis

To investigate the relationship between scores of the SDQ questionnaire and the demographic factors, descriptive analysis and 95% confidence interval were used. The results of this study were analyzed using statistical software SPSS 16. A p value of <0.05 was considered statistically significant. Statistical software of STATA was used for data analysis because the sampling method was multistage cluster sampling.

Result

Among the 5200 (12-17 year olds) adolescents, 29 cases were excluded from this study due to defect of information on the demographic questionnaire and the SDQ. Among the remaining 5171 cases, 2593 (50.14%) were boys and 2578 (49.86%) were girls. The mean age of the participants was 14.62; the mean age was not significantly different in the two sexes ($P \geq 0.05$). Of the subjects, 15% refused to be interviewed, so response rate was 85%. The highest prevalence of psychological problems in the five selected provinces was related to conduct problems (24%), and the lowest prevalence was related to social problems (5.76%) (Table 1).

The prevalence of Psychological Problems in Terms of Demographic Factors:

1-The prevalence of psychological problems in terms of gender:

Compared to other problems, conduct problem had the most prevalence in boys (6.25%), and social problems had the least prevalence in girls (5.5%).

Comparison of 95% confidence interval of the prevalence of psychological problems between the two genders in the self-report version of the SDQ suggested a significant difference only in emotional problems between the two genders (Table 2).

2-The prevalence of psychological problems in terms of age:

Among the two age groups, 15 to 17 year olds had the highest rates of emotional problems (8.03%), conduct problems (24.8%), hyperactivity problems (14.2%), social problems (6.2%) and overall criterion problems (14.7%); 12 to 14 year olds had the highest rates of problems with peers (7.5%)(Table 3).

Comparison of 95% confidence interval of the prevalence of psychological problems between the two ages in the self-report version of the SDQ suggested no significant difference in the psychological problems between the two ages (Table 3).

3-The prevalence of psychological problems in terms of province of residence:

Among the five selected provinces, Fars allocated the highest rates of conduct problems (28.4), hyperactivity problems (21.5%) and overall criterion problems (17.3%); Esfahan had the highest rates of emotional problems (9.1%) and problems with peers (8.1%); and Khorasan Razavi had the highest rates of social problems (7.6%) (Table 4).

Comparison of 95% confidence interval of the prevalence of psychological problems in the self-report version of the strengths and difficulties questionnaire (SDQ) revealed a significant difference between the provinces as follows: between Fars with Khorasan Razavi and East Azarbaijan in conduct problem; between Fars with other provinces and between Tehran with Khorasan Razavi and East Azarbaijan in hyperactivity problems; between Isfahan and Khorasan Rzavi with Fars and between Khorasan Razavi with East Azarbaijan in social problems; and between Fars with Khorasan Razavi and East Azarbaijan and between Tehran with Khorasan Razavi in overall criteria on problems (Table 4).

Table 1: The Prevalence and Confidence Interval of Psychological Problems in the Self- Report Version of the SDQ in the Total Population

Psychological problems	Number	Percent	Confidence interval	
			Min	Max
Emotional problems	418	8.09%	20.09	22.77
Conduct problems	1161	24%	31.51	34.47
Hyperactivity problems	702	13.95%	18.84	21.32
Problems with peers	404	7.25%	24.21	27.06
Social problems	272	5.76%	6.77	8.54
Overall criteria on problems	710	14.26%	23.11	25.98

Table 2: The Prevalence and Confidence Interval of Psychological Problems in the Self- Report Version of the SDQ in Terms of Gender

Psychological problems		Number	Percent	Confidence interval	
				Min	Max
Emotional problems	Boys	134	5.2%	3.9	6.4
	Girls	284	11.2%	9.6	12.7
Conduct problems	Boys	620	25.6%	23.3	27.9
	Girls	541	22.2%	20	24.3
Hyperactivity problems	Boys	381	15.2%	13.2	17.1
	Girls	321	12.6%	10.9	14.3
Problems with peers	Boys	214	8.1%	6.6	9.5
	Girls	190	6.3%	5.06	7.5
Social problems	Boys	142	5.9%	4.6	7.2
	Girls	130	5.5%	4.3	6.7
Overall criteria on problems	Boys	322	12.6%	10.7	14.4
	Girls	388	16.03%	14.1	17.8

Table 3: The Prevalence and Confidence Interval of Psychological Problems in the Self- Report Version of the SDQ in Terms of Age

Psychological problems		Number	Percent	Confidence interval	
				Min	Max
Emotional problems	12 to 14	179	7.8%	6.2	9.4
	15 to 17	209	8.03%	6.6	9.3
Conduct problems	12 to 14	473	22.3%	19.6	24.9
	15 to 17	612	24.8%	22.6	27
Hyperactivity problems	12 to 14	296	13.3%	11.2	15.3
	15 to 17	363	14.2%	12.5	16.05
Problems with peers	12 to 14	175	7.5%	5.9	9.1
	15 to 17	202	6.9%	5.6	8.2
Social problems	12 to 14	107	5.2%	4.2	6.9
	15 to 17	153	6.2%	5.2	7.5
Overall criteria On problems	12 to 14	287	13.2%	11.1	15.3
	15 to 17	375	14.7%	12.9	16.5

Table 4: The Prevalence and Confidence Interval of Psychological Problems in the Self- Report Version of the SDQ in Terms of Province of Residence

Psychological problems		Number	Percent	Confidence interval	
				Min	Max
Emotional problems	Tehran	73	8.09%	6.1	10.02
	Khorasan Razavi	58	6.3%	4.6	8.07
	Isfahan	114	9.1%	7.5	10.8
	East Azarbaijan	91	8.9%	7.02	10.9
	Fars	82	8.5%	6.5	10.4
Conduct problems	Tehran	228	25.6%	22.5	28.6
	Khorasan Razavi	181	20.18%	17.4	22.9
	Isfahan	292	23.6%	21.09	26.1
	East Azarbaijan	196	20.15%	17.4	22.8
	Fars	264	28.4%	24.9	31.9
Hyperactivity problems	Tehran	162	15.7%	13.1	18.2
	Khorasan Razavi	83	9.2%	7.1	11.4
	Isfahan	155	12.5%	10.6	14.3
	East Azarbaijan	98	9.3%	7.4	11.2
	Fars	204	21.5%	18.7	24.2
Problems with peers	Tehran	117	7.5%	5.5	9.5
	Khorasan Razavi	60	6.6%	5.06	8.1
	Isfahan	102	8.1%	6.6	9.6
	East Azarbaijan	59	6.06%	4.3	7.8
	Fars	66	6.9%	5.1	8.8
Social problems	Tehran	52	5.7%	3.9	7.4
	Khorasan Razavi	68	7.6%	5.8	9.4
	Isfahan	78	6.3%	4.9	7.6
	East Azarbaijan	41	4.3%	2.9	5.6
	Fars	33	3.5%	2.2	4.8
Overall criteria on problems	Tehran	162	15.7%	13.05	18.3
	Khorasan Razavi	97	10.8%	8.6	13.03
	Isfahan	167	13.5%	11.5	15.4
	East Azarbaijan	120	11.9%	9.8	14.1
	Fars	164	17.3%	14.7	19.9

Table 5: The Prevalence and Confidence Interval of Psychological Problems in the Self- Report Version of the SDQ in Terms of Education

Psychological problems		Number	Percent	Confidence interval	
				Min	Max
Emotional problems	Middle School	171	7.9%	6.3	9.5
	High School	211	8.03%	6.6	9.4
Conduct problems	Middle School	456	21.8%	19.2	24.5
	High School	612	25.4%	23.3	27.6
Hyperactivity problems	Middle School	287	13.04%	10.9	15.1
	High School	358	14.4%	12.6	16.2
Problems with peers	Middle School	175	7.2%	5.7	8.7
	High School	191	6.8%	5.5	8.2
Social problems	Middle School	107	7.3%	3.9	6.7
	High School	149	6.2%	5.05	7.4
Overall criteria on problems	Middle School	282	13.07%	10.9	15.1
	High School	367	14.8%	12.9	16.6

4-The prevalence of psychological problems in terms of education:

Between middle and high school graduates, high school participants reported higher levels of emotional problems (8.03%), conduct problems (25.4%), hyper activity problems (14.4%), social problems (6.2%) and overall criteria on problems (14.8%). The middle school participants also showed greater impairment in problems with peers (7.2%) compared with the participants in high school (Table 5).

Comparison of 95% confidence interval of the prevalence of psychological problems in the self-report version of the strengths and difficulties questionnaire (SDQ) revealed no significant difference in the problems between middle and high school graduates (Table 5).

Discussion

Community-based research in psychiatry is required to plan and develop psychiatric services and reviews of psychosocial factors associated with psychiatric problems in the community (17). This study aimed to codify a comprehensive and fundamental study to estimate the prevalence of psychiatric problems in adolescents in Iran, and to assess the prevalence of these problems in five populations of Tehran, East Azarbaijan, Isfahan, Khorasan Razavi and Fars. The screening instrument used in this study was SDQ whose standardization has been examined in many cultures, countries and languages (12, 14 and 18-36).

In this study, based on the self-report version of the strengths and difficulties questionnaire (SDQ), the prevalence of psychological problems in the adolescents was higher than most studies. In this study, comparison between the two gender groups was possible because no significant difference was found between different ages of the adolescents. Also, no significant difference was found between the two

genders in terms of education and province of residence.

Among 12 to 17 year old adolescents who completed the self-report version of the strengths and difficulties questionnaire (SDQ), the highest prevalence of psychological problems in adolescents in the five provinces of Iran was related to conduct problems (24%), and the lowest related to social problems (5.76%). Hyperactivity problems, emotional problems and problems with peers accounted for 13.95, 8.09 and 7.25percent of the total population, respectively; over all criteria on problems including emotional problems, conduct problems, hyperactivity problems and problems with peers accounted for 14.26 percent of the total population.

In this study, the prevalence of psychological problems in adolescents in the population in Fars province was higher than expected. Among the 5 provinces, Fars allocated the highest rates of conduct problems, hyperactivity problems and overall criterion problems; Esfahan had the highest rates of emotional problems and problems with peers; and Khorasan Razavi had the highest rates of social problems.

As expected, the prevalence of emotional problems in girls was more than boys. According to this study, the rate of hyperactivity problems was reduced with increase in age. Also, the prevalence of psychological problems was associated with parents' education level and occupation. Those adolescents whose parents had higher education level and more desirable jobs had fewer psychological problems.

The results of the self-report version of the strengths and difficulties questionnaire (SDQ) are consistent and comparable with the results of some studies. Such a study was conducted in Japan (1990), and it found that 84.3 percent of adolescents did not have any particular problem at the beginning of the high school and that psychiatric problems were found in the remaining 15.7; they also found detectable abnormalities in 14.8 percent of the adolescents (37). In a study conducted in

Ireland by Lynch et al. (2006), it was found that about 19.4% of 723 (12-17 year old) adolescents were at risk of psychiatric problems and among them, 15.6% met the criteria for a psychiatric problem (38). In a study conducted in the UAE, the prevalence of psychiatric problems in a population of 3278 adolescents studying in Roy Aleyn high school was 23.9% (39). In a longitudinal study conducted in the USA on 1420 (9 to 16 year old) adolescents, the point prevalence of psychiatric problems was equal to 13.3%, and the prevalence of problems during the study was equal to 36.7% (40). In another study in America, the prevalence of psychiatric problems in children 9 to 17 years of age was about 21% in rural areas (41). In a study conducted in Taiwan on high school students in three consecutive years, the prevalence of psychiatric problems was 14.8 to 22.7 percent; the most frequent problems were hyperactivity problems and substance abuse problems (42). Also, Gosden et al. (2003) performed a study on 15- 17 year old male adolescent remand prisoners in Denmark, and the results of this study showed that the past year prevalence of any mental problems was 69% and the prevalence of substance use problems was 41%. Furthermore, among them, 2% had schizophrenia, 2% schizotypal problems and 36% had probable personality problems. Conduct problems were found in 31% and 1% had hyperkinetic problems (43).

Few studies have reported the higher rates of psychiatric problems in their studied groups compared to the present study. Such a study was done in Russia following the changes due to collapse of the Soviet Union, and it found that the prevalence of psychiatric problems in 7 to 14 year old children was 70 percent (44).

Limitations

Sample selection of adolescents with age range of 12 and older was the limitations of this project that may not reflect all childhood psychological problems. Another limitation of this study was its focus on five of Iran's urban population that may not be representative of the total population of the five provinces.

Conclusion

In this study, the prevalence of psychological problems based on the self-report version of the strengths and difficulties questionnaire (SDQ) in the total population was 14.26 percent. Thus, in general, this percentage of adolescents in the five selected provinces of Iran had symptoms of psychological problems and should be provided with consultation and mental health services.

Acknowledgment

This study was conducted by Tehran University of Medical Sciences, Psychiatry and Psychology Research Center; Shiraz University of Medical Sciences,

Research Center for Psychiatry and Behavioral Sciences; Tabriz University of Medical Sciences, Clinical Psychiatry Research Center; Mashhad University of Medical Sciences, Psychiatry and Behavioral Sciences Research Center; Isfahan University of Medical Sciences, Behavioral Sciences Research Center; Iran University of Medical Sciences, Deputy of Research.

References

1. Mezzich JE, Üstun TB. Quantitative and experimental methods in psychiatry. In: Sadock BJ, Sadock VA, eds. *Comprehensive Textbook of Psychiatry*. 8th ed. Philadelphia: Lippincott Williams & Wilkins; 2005.
2. Mohammadi MR, Davidian H, Noorbala AA. An epidemiological survey of psychiatric disorders in Iran. *Clinical Practice and Epidemiology in Mental Health* 2005; 1: 16.
3. Mohammadi MR, Rahgozar M, BagherYazdi A. [Epidemiology of psychiatric disorders in Tehran (Persian)]. *Thought and Behavior in Clinical Psychology* 2003; 9: 4-12.
4. Tehrani-Doost M, Shahrivar Z, Pakbaz B, Rezaie A, Ahmadi F. Normative data and psychometric properties of the parent and teacher versions of the strengths and difficulties questionnaire (SDQ) in an Iranian community sample. *J Res Med Sci* 2009; 14: 69-77.
5. Mahmoudi-gharaei J, Mousavi SS, Bina M, Golampoor E, Eisar S. Comorbidity of depressive and generalized anxiety symptoms in adolescent survivors of Bam earthquake (2003) with posttraumatic stress disorder: A case control-study. *Iranian Journal of Psychiatry* 2006; 1: 117-122.
6. Hebrani P, Abdolalian E, Behdani F, Vosoogh I, Javanbakht A. The prevalence of attention deficit hyperactivity disorder in preschool-age children in Mashhad, north-East of Iran. *Arch Iran Med* 2007; 10: 147-151.
7. Hemmaty N, Danesh Amooz B, Panaghi L. The prevalence of suicidal ideation in high school students in the city Abdanan (Ilam). *Advances in Cognitive Science* 2004; 6: 79-86.
8. Mohammadi MR, Rezaiyan H. [Investigation of mental and behavioral disorders among schoolchildren in Tehran (Persian)]. *Journal of Teb and Tazkieh* 2000; 39: 59-63.
9. Tavakkolizadeh J, Bolhari J, Mehryar A, Dezhkam M. [Epidemiology of attention deficit and disruptive behaviour disorders in elementary school children of Gonabad town, north east Iran (Persian)]. *IJPCP* 1997; 3: 40-52.
10. Ghafari Nejad A. Prevalence of Social phobia disorder and related factors among high school students in Kerman. *Scientific Journal of Hamadan University of Medical Sciences & Health Services* 1998; 8: 1-9.
11. Alavi A, Mohammadi MR, Joshaghani N, Mahmoudi-Gharaei J. Frequency of Psychological Disorders amongst Children in

- Urban Areas of Tehran. *Iranian Journal of Psychiatry* 2010; 5: 55-59.
12. 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: 534-39.
 13. Goodman R, Scott S. Comparing the Strengths and Difficulties Questionnaire and the Child Behavior Checklist: is small beautiful. *Journal of Abnormal Child Psychology* 1999; 27: 17-24.
 14. Goodman R, Ford T, Corbin T, Meltzer H. Using the Strengths and Difficulties Questionnaire (SDQ) multi-informant algorithm to screen looked-after children for psychiatric disorders. *European Child and Adolescent Psychiatry* 2004; 13: 25-31.
 15. Goodman R. The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry* 1997; 38: 581-586.
 16. Ghanizadeh A, Izadpanah A, Abdollahi G. Scale Validation of the Strengths and Difficulties Questionnaire in Iranian Children. *Iran J Psychiatry* 2007; 2: 65-71 .
 17. Rah Khodroo. Tehran: Institute of Communication and data transmission industries; 1998 .
 18. Abou-Saleh MT, Ghubash R, Daradkeh TK. A1 Ain Community Psychiatric Survey. I. Prevalence and socio-demographic correlates. *Soc Psychiatry Psychiatr Epidemiol* 2001; 36: 20-28.
 19. Samad L, Hollis C, Prince M, Goodman R. Child and adolescent psychopathology in a developing country: testing the validity of the strengths and difficulties questionnaire (Urdu version). *Int J Methods Psychiatr Res* 2005; 14: 158-166 .
 20. Mojtabai R. Serious emotional and behavioral problems and mental health contacts in American and British children and adolescents. *J Am Acad Child Adolesc Psychiatry* 2006; 45: 1215-1223.
 21. Kashala E, Elgen I, Sommerfelt K, Tylleskar T. Teacher ratings of mental health among school children in Kinshasa, Democratic Republic of Congo. *Eur Child Adolesc Psychiatry* 2005; 14: 208-215.
 22. Muris P, Meesters C, Van Den Berg F. The Strengths and Difficulties Questionnaire (SDQ)--further evidence for its reliability and validity in a community sample of Dutch children and adolescents. *Eur Child Adolesc Psychiatry* 2003; 12: 1-8.
 23. Hawes DJ, Dadds MR. Australian data and psychometric properties of the Strengths and Difficulties Questionnaire. *Aust N Z J Psychiatry* 2004; 38: 644-651.
 24. Thabet AA, Stretch D, Vostanis P. Child mental health problems in Arab children: application of the strengths and difficulties questionnaire. *Int J Soc Psychiatry* 2000; 46: 266-280.
 25. Alyahri A, Goodman R. Validation of the Arabic Strengths and Difficulties Questionnaire and the Development and Well-Being Assessment. *East Mediterr Health J* 2006; 12: 138-146 .
 26. Bourdon KH, Goodman R, Rae DS, Simpson G, Koretz DS. The Strengths and Difficulties Questionnaire: U.S. normative data and psychometric properties. *J Am Acad Child Adolesc Psychiatry* 2005; 44: 557-564.
 27. Bettge S, Ravens-Sieberer U, Wietzker A, Hölling H. Methodological comparison between the Child Behavior Checklist and the Strengths and Difficulties Questionnaires. *Gesundheitswesen* 2002; 64: 119-24.
 28. Smedje H, Broman JE, Hetta J, Von Knorring AL. Psychometric properties of a Swedish version of the "Strength and Difficulties Questionnaire". *Eur Child Adolesc Psychiatry* 1999; 8: 63-70.
 29. Heiervang E, Stormark KM, Ludervold AJ, Heimann M, Goodman R, Posserud M, Ullebo AK, Plessen KJ, Bjelland I, Lie SA, Gillberg C. Psychiatric disorders in Norwegian 8- to 10-year-olds; an epidemiological survey of prevalence, risk factors, and service use. *J Am Acad Child Adolesc Psychiatry* 2007; 46: 438-447.
 30. Rønning JA, Handegaard BH, Sourander A, Mørch WT. The Strengths and Difficulties Self-Report Questionnaire as a screening instrument in Norwegian community samples. *Eur Child Adolesc Psychiatry* 2004; 13: 73-82.
 31. Woerner W, Fleitlich-Bilyk B, Martinussen R, Fletcher J, Cucchiario G, Dalgalarondo P, Lui M, Tannock R. The Strengths and Difficulties Questionnaire overseas: evaluations and applications of the SDQ beyond Europe. *Eur Child Adolesc Psychiatry* 2004; 13: 47-54.
 32. Woerner W, Becker A, Rothenberger A. Normative data and scale properties of the German parent SDQ. *Eur Child Adolesc Psychiatry* 2004; 13: 3-10.
 33. Obel C, Heiervang E, Rodriguez A, Heyerdahl S, Smedje H, Sourander A, Guethmundsson OO, Clench-Aas J, Christensen E, Heian F, Mathiesen KS, Magnússon P, Njarethvík U, Koskelainen M, Rønning JA, Stormark KM, Olsen J. The Strengths and Difficulties Questionnaire in the Nordic countries. *Eur Child Adolesc Psychiatry* 2004; 13: 32-39.
 34. Marzocchi GM, Capron C, Di Pietro M, Duran Tauleria E, Duyme M, Frigerio A, Gaspar MF, Hamilton H, Pithon G, Simões A, Théron C. The use of the Strengths and Difficulties Questionnaire (SDQ) in Southern European countries. *Eur Child Adolesc Psychiatry* 2004; 13: 40-46.
 35. Rothenberger A, Woerner W. Strengths and Difficulties Questionnaire (SDQ) – Evaluation and applications. *Eur Child Adolesc Psychiatry* 2004; 13: 1-2.
 36. Becker A, Hagenberg N, Roessner V, Woerner W, Rothenberger A. Evaluation of the self-reported SDQ in a clinical setting: Do self-reports tell us more than ratings by adult informants? *Eur Child Adolesc Psychiatry* 2004; 13: 17-24.
 37. Suzuki M, Morita H, Kamoshita S. Epidemiological survey of psychiatric disorders

- in Japanese school children. Part III: Prevalence of psychiatric disorders in junior high school children. *Nippon Koshu Eisei Zasshi* 1990; 37: 991-1000.
38. Lynch F, Mills C, Daly I, Fitzpatrick C. Challenging times: prevalence of psychiatric disorders and suicidal behaviours in Irish adolescents. *J Adolesc* 2006; 29: 555-573.
 39. Eapen V, Al-Gazali L, Bin-Othman S, Abou-Saleh M. Mental health problems among schoolchildren in United Arab Emirates: prevalence and risk factors. *J Am Acad Child Adolesc Psychiatry* 1998; 37: 880-886.
 40. Costello EJ, Mustillo S, Erkanli A, Keeler G, Angold A. Prevalence and development of psychiatric disorders in childhood and adolescence. *Arch Gen Psychiatry* 2003; 60: 837-844.
 41. Angold A, Erkanli A, Farmer EM, Fairbank JA, Burns BJ, Keeler G, Costello EJ. Psychiatric disorder, impairment, and service use in rural African American and white youth. *Arch Gen Psychiatry* 2002; 59: 893-901.
 42. Gau SS, Chong MY, Chen TH, Cheng AT. A 3-Year panel study of mental disorders among adolescents in Taiwan. *Am J Psychiatry* 2005; 162: 13- 44.
 43. Gosden NP, Kramp P, Gabrielsen G, Sestoft D. Prevalence of mental disorders among 15-17-year-old male adolescent remand prisoners in Denmark. *Acta Psychiatr Scand* 2003; 107: 102-110.
 44. Goodman R, Slobodskaya H, Knyazev G. Russian child mental health-a cross-sectional study of prevalence and risk factors. *Eur Child Adolesc Psychiatry* 2005; 14: 28-33.