



Prevalence and Socio-Demographic Determinants of Behavioral Disorders Among Primary School Students

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Abstract

Background: Studies have shown the high prevalence rate of behavioral disorders in primary school students, which can underlie many complications and problems for the students as well as their families.

Objectives: The aim of this study was determined by prevalence and socio-demographic factors related with behavioral disorders among primary school students.

Methods: This is a cross-sectional study, which has been done among 350 primary school students in the city of Abadan, in the southwest of Iran. Samples have been selected based on simple random sampling among the teachers, and the Rutter behavioural disorder questionnaire (teacher form) was used for the data collection self-questionnaire. Data were analysed by SPSS version 21 using appropriate statistical tests including logistic regression at a 95% significant level.

Results: Our findings indicated 15.8% of participants have behavioral disorders. Males, parents' divorce, lower number of family members, as well as mothers' educational level lower were the best predictive factors of behavioral disorders among participants.

Conclusions: Based on our finding, the prevalence of behavioral disorders was 15.8%, it seems that designing and implementation of a behavioral disorders prevention program among primary school student is necessary.

Keywords: Behavior, Health Psychology, Social Psychology, Prevention

1. Background

In developing countries, children constitute a large part of the population and their contribution to the total population of almost 50%; thus it is necessary to implement fundamental steps for the prevention and treatment of their mental and behavior disorders (1). Behavioral disorders involve a template of withering behaviors in children and may be causing several problems at home, school, and the society; some type of behavioral disorders include: inattention, impulsivity, aggressive behaviors, and etc. Furthermore, behavioral disorders can be followed by several complications such as lack of academic achievement, crime, and substance abuse (2, 3). These disorders also increase the risk of mental disorders in adulthood (4). Children with behavioral disorders had little attention, low self-esteem, problem communicating, and were easily frustrated (5). Researches by Rutter and cooperation among students can be considered a turning point in children's mental health research; their finding has shown

that despite the improvement in living conditions in most countries, children and adolescents with behavioral problems is rapidly increasing (6, 7). Prevalence of behavioral disorders and its side effects between students prompts the necessity of designing and planning preventive programs. Thus, planning preventive programs, investigating the situation, and knowing present conditions are necessary (8). Iran is one of the countries in which the prevalence of the behavioural disorders has been increasing. For example, recent studies reported the prevalence of behavioral disorders to be among 10% to 23% among primary school students in different cities of Iran (9).

2. Objectives

In spite of the increased prevalence of the behavioral disorders among Iranian primary school students (9), no study of possible socio-demographic factors related with behavioural disorders among primary school students in

the southwest of Iran has been documented in the literature. The main objective of this study was to determine the prevalence and socio-demographic determinants of behavioral disorders among primary school students in southwest Iran.

3. Methods

This cross-sectional study was conducted among primary school students in Shadegan city, southwest Iran, during 2016. The sample size was calculated at a 95% significant level according to the results of a previous study (9) and a sample of 350 was estimated. Enrolling the participants and collecting the data were done by the following stages. First, different areas of the city were classified based on the division of the geographical region, then for each social class, 4 primary schools were randomly selected (a total of 8 primary schools were selected). Then, subjects among the primary school were enrolled into this study voluntarily. Finally, the teacher volunteers were given the self-questionnaire. Furthermore the demographic data were then completed by the students' parents (mostly mothers). This study was conducted with approval from the Abadan school of Medical Sciences' institutional review board and informed consent was obtained from the participants. The responded rate in this study was 85.1%. Only the subjects who were primary school students in Shadegan city, southwest Iran, were eligible to participate in this study. This study has been approved by the institutional review board at the Abadan school of Medical Sciences, Abadan, Iran (IR.ABADANUMS.REC.1395.113).

3.1. Questionnaire

The questionnaire included 2 sections, which comprised of 41 questions and items: 11 questions for demographic variables and 30 items for behavioral disorder.

A: Demographics

Background data collected were: age (years), fathers' age (years), mothers' age (years), parents' divorce (yes or no), gender (male or female), and household size (number), mothers' job (housewife, employee), fathers' job (unemployed, freelancers, labor, and staff employee), parents' education (elementary, secondary, high school, or university).

B: Behavioural disorder questionnaire

This part included 30 items, which were completed by the students' teacher. Teachers studied the questionnaires' items and based on their observations of the children's behavior in the last 3 weeks they completed the

questionnaire. In order to facilitate respondents' responses to the items, all items were standardized to a 3-point Likert scale, ranging from 0 to 2. An estimated reliability coefficient for the questionnaire was reported 0.74 (10). In this study we used the Persian form of the behavioral disorder questionnaire, which was used in several studies in Iran (9). The reliability coefficient for the behavioral disorder questionnaire in our study was 0.79, suggesting that the internal consistency was adequate.

Data were analyzed by the SPSS version 21 using appropriate statistical tests including logistic regression at a 95% significant level.

4. Results

The mean age of respondents was 9.33 years (95% CI: 9.21, 9.45). More details of the demographic characteristics of the participants are shown in Table 1.

Table 1. The Demographic Characteristics Among the Participants

Variable	Number	Percent
Gender		
Male	156	52.3
Female	142	47.7
Parents divorce		
Yes	7	2.3
No	291	97.7
Mother education		
Elementary school	30	10.1
Guidance school	52	17.4
Diploma	189	63.4
Academic	27	9.1
Father education		
Elementary school	15	5
Guidance school	123	41.3
Diploma	142	47.7
Academic	18	6

Of the 298 respondents, 47 (15.8%) had behavioral disorders based on the Rutter questionnaire.

Finally, a step-wise model building procedure was conducted and stopped on the 5th step of the procedure. The best model was selected, and sex, parents' divorce, family members, and mother education level were more influential predictors on behavioral disorders among participants (Table 2).

Table 2. The Correlation Between Background Variables and Behavioral Disorders Using Logistic Regression Analyse (Final Model, Step. 5)

Variables	Crude OR (95 % CI)	P Value	Adjusted OR (95 % CI)	P Value
Sex				
Female	1	-	1	-
Male	2.453 (1.252 - 4.805)	0.009	4.052 (1.89 - 9.176)	0.001
Household size, n				
1 - 3	1	-	1	-
4 - 6	0.465 (0.246 - 0.876)	0.018	0.292 (0.138 - 0.617)	0.001
Mother education				
Under diploma	1	-	1	-
Diploma	0.411 (0.149 - 1.133)	0.086	0.304 (0.099 - 0.934)	0.038
Academic	0.263 (0.112 - 0.618)	0.002	0.111 (0.040 - 0.305)	< 0.001
Parents' divorce				
No	1	-	1	-
Yes	4.210 (0.911 - 19.461)	0.066	12.111 (2.058 - 71.265)	0.006

5. Discussion

Our results showed that 15.8% of the students had behavioral disorders. The percentage range of behavioral disorders reported among Iranian students was from 10 to 23; for example, Jalilian et al., in their study among primary school students, in the west of Iran, reported that the prevalence of behavioral disorder was 16.1% (9). Studies done in other countries reported a prevalence of 7% to 20% (11, 12). Considering this high prevalence among school-age children, it is important to identify individuals at risk. These results should be taken into consideration by health policy makers. However, emphasis on the children does not suffice, due to the fact that behavioural disorders result from the child's interaction with the environment. Therefore, in order to reduce these types of disorders, specific interventions should be conducted by specialists that focus on family, friends, school, and society. Some of preventive behavioural disorder skills are as follows: practical skills to child, problem solving to child, parenting to parents, communication skills to teachers, and stress managements to child (9).

We found that behavioral disorders were more prevalent in males compared with females, which is consistent with other studies (13). Moreover, there was a significant relationship between the number of family members and behavioral disorders. In this regard, some researchers state that the increase in social support systems in families with more members and the increase in the number of siblings improves an individual's power to confront problems and increases the children's ability to interact with each other

(14). However, other studies show that the likelihood of behavioural disorders is 2.5 times more in families with more members. This could be due to the parents not being capable of educating their children sufficiently due to financial strains (11-14). This point can be taken into account when educating childbearing skills to parents.

Our result showed a significant relationship between the educational level of the mother and the children's behavioral disorders; therefore, the behavioral disorders were seen less when the mother had a higher educational level. This result is consistent with the other study (14). We can state that parents with a high educational level are more aware of the skills that are necessary to educate children and pay more attention to their child's mental needs, which could in turn reduce children behavioural disorders.

The prevalence of behavioral disorders in children who reported their parents' divorce was more. This higher prevalence could be caused by financial problems, the lack of presence of one of the parents, the creation of a new family after the parents' divorce, and stressful conditions associated with these issues. Some studies have also shown that being a single parent is a strong risk factor for behavioral disorders among children (1, 2).

5.1. Limitations

Our study has a few limitations. First, the data collection is based on self-reporting, which always faces the risk of recall bias. This point, especially regarding the mental health disorder, is much more important; therefore, we

suggested designing studies based on interviews and clinical diagnosis to investigate behavioral disorders. Second, the results of data collection only among a sample of Iranian primary school students in the southwest of Iran cannot be generalized to other primary students in Iran. Third, this study was done on students with normal IQs, therefore, we cannot distribute the results to all students.

5.2. Conclusion

The prevalence of behavioral disorders among students was 15.8% based on the Rotter's scale (teacher's form), which is considerably high. Males' parents' divorce, more household size, and mothers' educational level in low were more influential predictors on behavioural disorders.

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References

- Almqvist F, Kumpulainen K, Ikaheimo K, Linna SL, Henttonen I, Huikko E, et al. Behavioural and emotional symptoms in 8-9-year-old children. *Eur Child Adolesc Psychiatry*. 1999;**8 Suppl 4**:7-16. doi: [10.1007/PL00010698](https://doi.org/10.1007/PL00010698). [PubMed: [10654129](https://pubmed.ncbi.nlm.nih.gov/10654129/)].
- Harland P, Reijneveld SA, Brugman E, Verloove-Vanhorick SP, Verhulst FC. Family factors and life events as risk factors for behavioural and emotional problems in children. *Eur Child Adolesc Psychiatry*. 2002;**11**(4):176-84. doi: [10.1007/s00787-002-0277-z](https://doi.org/10.1007/s00787-002-0277-z). [PubMed: [12444427](https://pubmed.ncbi.nlm.nih.gov/12444427/)].
- Faraone SV, Perlis RH, Doyle AE, Smoller JW, Goralnick JJ, Holmgren MA, et al. Molecular genetics of attention-deficit/hyperactivity disorder. *Biol Psychiatry*. 2005;**57**(11):1313-23. doi: [10.1016/j.biopsych.2004.11.024](https://doi.org/10.1016/j.biopsych.2004.11.024). [PubMed: [15950004](https://pubmed.ncbi.nlm.nih.gov/15950004/)].
- Pandina GJ, Bilder R, Harvey PD, Keefe RS, Aman MG, Gharabawi G. Risperidone and cognitive function in children with disruptive behavior disorders. *Biol Psychiatry*. 2007;**62**(3):226-34. doi: [10.1016/j.biopsych.2006.09.036](https://doi.org/10.1016/j.biopsych.2006.09.036). [PubMed: [17210137](https://pubmed.ncbi.nlm.nih.gov/17210137/)].
- Sausser S, Waller RJ. A model for music therapy with students with emotional and behavioral disorders. *Arts Psychother*. 2006;**33**(1):1-10. doi: [10.1016/j.aip.2005.05.003](https://doi.org/10.1016/j.aip.2005.05.003).
- Rutter M. A children's behaviour questionnaire for completion by teachers: preliminary findings. *J Child Psychol Psychiatry*. 1967;**8**(1):1-11. doi: [10.1111/j.1469-7610.1967.tb02175.x](https://doi.org/10.1111/j.1469-7610.1967.tb02175.x). [PubMed: [6033260](https://pubmed.ncbi.nlm.nih.gov/6033260/)].
- Mirzaei-Alavijeh M, Hidarnia A, Kok G, Niknami S, Motlagh MI, Pishdar M. Child-parent relationships and parents' preventive behaviors affecting the onset of substance use in children: My family study. *Avicenna J Neuro Psycho Physio*. 2015;**4**(4).
- Eldredge LK, Markham CM, Kok G, Rutter RA, Parcel GS. *Planning health promotion programs: an intervention mapping approach*. John Wiley Sons; 2016.
- Jalilian F, Rakhshani F, Ahmadpanah M, Zinat MF, Moieni B, Moghimbeigi A, et al. Prevalence of behavioral disorders and its associated factors in Hamadan primary school students [In Persian]. *Sci J Hamadan Univ Med Sci Health Serv*. 2013;**19**(4):62-8.
- Klein JM, Gonçalves A, Silva CF. The Rutter children behaviour questionnaire for teachers: From psychometrics to norms, estimating caseness. *Psico-USF*. 2009;**14**(2):157-65. doi: [10.1590/s1413-82712009000200004](https://doi.org/10.1590/s1413-82712009000200004).
- Egelund N, Hansen KF. Behavioural disorders in Danish schools: a quantitative survey. *Eur J Spec Needs Educ*. 2000;**15**(2):158-70. doi: [10.1080/088562500361592](https://doi.org/10.1080/088562500361592).
- Tadesse B, Kebede D, Tegegne T, Alem A. Childhood behavioural disorders in Ambo district, western Ethiopia. I. Prevalence estimates. *Acta Psychiatr Scand Suppl*. 1999;**397**:92-7. doi: [10.1111/j.1600-0447.1999.tb10700.x](https://doi.org/10.1111/j.1600-0447.1999.tb10700.x). [PubMed: [10470361](https://pubmed.ncbi.nlm.nih.gov/10470361/)].
- Taanila A, Ebeling H, Heikura U, Järvelin MR. Behavioural problems of 8-year-old children with and without intellectual disability. *J Pediatr Neurol*. 2003;**1**(1):15-24.
- al-Kuwaiti MA, Hossain MM, Absood GH. Behaviour disorders in primary school children in Al Ain, United Arab Emirates. *Ann Trop Paediatr*. 1995;**15**(1):97-104. doi: [10.1080/02724936.1995.11747756](https://doi.org/10.1080/02724936.1995.11747756). [PubMed: [7598445](https://pubmed.ncbi.nlm.nih.gov/7598445/)].