



Quality of Life in the Mothers of Children With Attention Deficit Hyperactivity Disorder and its Effective Factors

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Abstract

Background and aims: Having a child with attention deficit hyperactivity disorder (ADHD) may have an impact on the quality of life of his/her parents, particularly his/her mother. However, very limited studies have addressed this issue in Iran and the world. Therefore, the aim of this study was to examine the quality of life in the mothers of children with ADHD and its effective factors.

Methods: The present descriptive-analytic study was carried out in Tehran from April to September 2016. A total of 110 mothers of ADHD children were enrolled in the study through a convenience sampling method, who referred to psychiatric centers of Tehran University of Medical Sciences. An informed consent form was obtained from all the participants as well. In addition, a researcher-made checklist for demographic characteristics and the 36-item Short Form of Health Survey Questionnaire (SF-36) were utilized for data collection. The collected data were then entered into SPSS 16 statistical software. Finally, descriptive tests (mean and median) and statistical tests including Pearson correlation test, independent *t* test, and one-way analysis of variance (ANOVA) were used for data analysis.

Results: The mean age of participated mothers was 39.5 years and most children were males (76.4%). The mean overall score of the quality of life was 60.6 ± 20.4 . Among the eight dimensions of the questionnaire, participants achieved the lowest score regarding the dimension of "the role limitations due to emotional problems" with the mean score of 52.43, while the highest score was observed in terms of "the physical function" dimension with the mean score of 77.30. No significant relationship was observed between any of the demographic characteristics and the mean overall score of the quality of life ($P > 0.05$).

Conclusion: In the present study, the quality of life of the mothers was not significantly different from the quality of life of normal mothers. However, the healthcare team should pay more attention regarding some dimensions of the quality of life. Eventually, similar studies are recommended to be conducted due to the lack of sufficient evidence regarding this issue among the mothers of ADHD children.

Keywords: Parents, Attention deficit hyperactivity disorder children, Quality of life, Effective factors

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Introduction

Child health and disease are associated with the health and disease of society.¹ Attention deficit hyperactivity disorder (ADHD) is one of the most common psychiatric disorders among the children,²⁻⁶ which is addressed as the most common chronic health problem in school-aged children.⁷ Despite the belief that the combination of genetic, environmental, and neurological factors play a role in the development of this disorder, no specific cause has so far been found in this respect.⁸ In one study conducted in 2007, the prevalence of ADHD was determined 5.2%⁹

and another study reported that the prevalence of this disorder was between 3.5% and 5.6% among French children.¹⁰ According to the reports of several studies, the rate of this disorder in the Iranian context is higher than the international rates. In one study in Hamedan, this rate was slightly more than 11%.² In another study in Sari, the prevalence of ADHD was reported to be close to 15% in children and adolescents.¹¹

These children are faced with hyperactivity, impulsivity, and the lack of attention² with many functional and social problems during their lives.⁷ Further, the families

of these children are encountered with many stressful problems.¹² However, they might not receive enough attention from the healthcare team members.¹³ In one study in this regard, Yousefia et al evaluated the stress levels of the mothers of ADHD children and those of normal children. The results showed that the mothers of ADHD children experienced higher levels of stress compared to those of healthy children.¹⁴ In another study, Harazni and Alkaissi examined the experience of the mothers of ADHD children. The major emerged themes in this study included the “burdens of caring” (encompassing academic track burden, the activities of daily living burdensome, as well as psychological and emotional burden), “inadequate support” including the lack of support from the father, relatives, schools, and the community, and finally, the “disturbances of the child’s behavior” which included hyperactivity, inattention, along with impulsivity and hostility.¹⁵

The World Health Organization (WHO) defines the quality of life as an individual’s perception of his/her position in life in the context of the culture and value systems in which s/he lives and in relation to his/her goals, expectations, standards, and concerns.¹⁶ In recent years, the issue of the quality of life has played an important role in the life of the parents of children with special disorders. Accordingly, many researchers have designed and conducted studies on this matter. Studies on the quality of life in the mothers of children with an autism disorder,^{17,18} the mothers of children with cerebral palsy,¹⁹ and the mothers of mentally disabled children²⁰ are among the examples in this regard. The stresses and problems that the mothers of these children experience may affect their quality of life.²¹ However, a few studies have focused on the quality of life in the parents of ADHD children. In one qualitative study in Tabriz, Gharibi et al evaluated mothers’ experiences in living with ADHD children and revealed four main concepts including “family disorderliness”, “social worries”, “educational worries”, and “mothers’ negative experienced senses”.²² In another study, Cappe et al reported that the quality of life of parents with ADHD children may be affected negatively.²³ Thus, having knowledge about the quality of the life of mothers with these children is necessary for its improvement. Considering the limitation of previous studies, especially among Iranian mothers (only one study exists in this regard in Iranian context), the present study was conducted to examine the quality of life in mothers of children with ADHD and its effective factors.

Materials and Methods

The present descriptive-analytical study was conducted in Tehran from April to September 2016. One hundred and ten mothers of ADHD children were included in the study through a convenience sampling method, who referred to psychiatric centers of Tehran University of

Medical Sciences. The inclusion criteria included being a child with the ADHD syndrome and diagnosed for at least six months, having no chronic and well-known psychological and physical diseases, being within the age range of 18-50 years, having no experience of any severe stresses including death and divorce, and not taking care of another patient. After selecting the samples, the objectives of the study were outlined for them by the researcher, and they were asked to sign the informed consent form. Then, the questionnaires were given to them to register the requested information within 30 to 60 minutes. The researcher was present in the clinic and answered mothers’ questions about the items. The returned questionnaires were kept confidential.

Furthermore, a researcher-made checklist for demographic characteristics and the 36-item Short Form of Health Survey Questionnaire (SF-36) were used as the research instruments. The demographic checklist includes data about age, gender, marital status, education, occupation, number of children, economic status, and care duration. Moreover, the SF-36 is a general tool for measuring the health status and the quality of life. This questionnaire encompasses eight dimensions including physical functioning, the role of physical functioning, bodily pain, general health perceptions, vitality, social functioning, the role of emotional functioning, and mental health. The overall score is converted on a scale of 0 to 100 in which a higher score is related to a higher level of the quality of life.²⁴ This questionnaire was validated in the Iranian context by Montazeri et al using internal consistency and convergent validity.²⁵ Based on the results of the above-mentioned study, this questionnaire is appropriate for examining the quality of life associated with health among Iranian general population.²⁵

The collected data were entered into SPSS software, version 16. Eventually, descriptive tests (mean and median) and analytical tests including the Pearson correlation test, independent *t* test, and one-way analysis of variance (ANOVA) were used for data analysis. The significance level in the used tests was considered to be less than 0.05.

Results

The mean age of the mothers in this study was 39.5 years and most of them had a diploma or lower (74.5%) degree. Among the children, most of them were males (76.4%). Table 1 presents the demographic characteristics in more detail. The mean overall score of the quality of life was 60.6±20.4. Among the eight dimensions of the quality of life, the lowest and highest scores belonged to dimensions of “the role limitations due to emotional problems” and “the physical function” with the mean scores of 52.43 and 77.30, respectively. The mean score of the quality of life among different dimensions is shown in Table 2. The results of the Pearson correlation test showed no significant correlation between the mean overall score

of mothers' quality of life and their age ($P>0.05$). There was also no correlation between mothers' age and any of the eight dimensions of the quality of life ($P>0.05$). The mean scores of the quality of life in mothers living with a spouse and alone (due to any reason including divorce or death) were 60.63 and 60.22, respectively, indicating a slight difference between the mean score of the quality of life in these two groups that was not statistically significant ($P>0.05$). The mean scores of the quality of life in mothers with under diploma and those with a diploma or higher degree were 58.72 and 66.68, respectively. Although mothers with higher education reported a higher score of the quality of life, this difference was not statistically significant between the two groups ($P>0.05$).

Discussion

According to some sources, the debate on the quality of life is a historical issue that goes back to 385 BC.²⁶ However, a few studies have evaluated the quality of life in mothers of ADHD children. The results of the present study showed that the mean overall score of the quality of life in the mothers of ADHD children was 60.6 (ranging from 0 to

100), which indicates a moderate level of the quality of life in these individuals. There was also no demographic factor affecting the mother's quality of life in the present study. Previous evidence related to the quality of life in the mothers of ADHD children demonstrated only one study in this regard in Iran. This study, which was conducted in Shiraz, assessed 100 mothers of ADHD children using a similar questionnaire like the one used in the present study in order to examine the quality of the life of the mothers. Based on the results, the quality of life in the mothers of ADHD children was significantly lower compared to normal mothers. In addition, the mean overall score of the quality of life in this study was 48.3.²⁷ The difference between the results of the present study and the above-mentioned study can be related to differences in the context of the two studies. Further, the families of the ADHD children in Tehran usually have more services and facilities compared to the same group in Shiraz. Additionally, the mentioned study was conducted a few years ago, while it has been necessary to consider the improvement of health status in recent years.

International studies on the quality of life in the mothers

Table 1. Demographics Characteristics of Participants

Variable	Levels	Number	Percent
Age (y)	<31	17	15.5
	31-40	66	60.0
	41-50	20	18.2
	>51	7	6.4
Gender	Female	110	100
	Male	0	0
Marital status	Single	2	1.8
	Married	104	94.5
	Divorced	3	2.7
	Widow	1	.90
Education	Illiterate	2	1.8
	Under high school diploma and diploma	82	74.5
Employment status	University	26	23.6
	Housemaid	95	86.4
Economic status	Employee	15	13.6
	Good	8	7.3
	Average	87	79.1
Number of family members	Weak	15	13.6
	2-3	39	35.5
	4-5	65	59.1
Children's gender	6 and above	6	5.5
	Female	26	23.6
Care duration (y)	Male	84	76.4
	0-4	61	55.5
	5-9	40	36.4
	10-15	9	8.2

Table 2. Mean Score of the Mothers Quality of Life Domains

Items	Number	Minimum	Maximum	Mean	SD
Physical functioning	110	5	100	77.30	24.07
Role of physical functioning	110	0	100	51.73	41.12
Role of emotional functioning	110	0	100	52.43	39.50
General health perceptions	110	10	100	61.06	20.18
Bodily pain	110	0	100	64.49	28.24
Mental health	110	0	96	59.63	18.09
Social functioning	110	0	100	63.19	23.85
Vitality	110	15	100	55.25	17.15
Total score	110	12.40	95	60.60	20.41

of ADHD children are very limited as well. In one study in Egypt, Azazy et al examined the quality of life in 125 parents of ADHD children. Similar to the findings of the present study, the results of the above-mentioned study revealed a moderate level of quality of life.²⁸ In another study in Taiwan, Chen et al investigated factors influencing the quality of life in 382 mothers of ADHD children. The WHO Quality of Life-BREF was used to examine the quality of life. The results of the study indicated that factors such as maternal depression, family status, and social support were among the ones that influenced the quality of life in the mothers of ADHD children. However, no data were reported regarding the quality of life in mothers and the study only evaluated the influential factors.²¹ Similarly, Xiang et al studied the quality of life in the mothers of ADHD children and compared it with that of the normal mothers in Hong Kong. The WHO Quality of Life-BREF was used to examine the quality of life of mothers. Their results showed that the quality of life in the mothers of these children was lower than that of normal mothers.²⁹ The difference between the results of the present study and those of Xiang et al's study can be related to a difference in data gathering tools used in the two studies. Additionally, the cultural and social issues were different in both studies, which needs attention.

The results of the present study conducted on other Iranian women indicated that the quality of life in the mothers of ADHD children was not significantly different from that of normal women. In one study in Shahr-e Kord, Zahedi and Deris studied the quality of life in 170 healthy pregnant women. A similar tool was used to evaluate the participants' quality of life. The mean overall score of the quality of life in women was 66.4.³⁰ Similarly, Amirabadizadeh et al conducted a study on 290 women aged 35 to 59 years in Birjand. Similar to the present study, the SF36 questionnaire was used in this study. The mean overall score of the quality of life in the study by Amirabadizadeh et al was 5.56.³¹ Although the mean overall score of the quality of life in the present study was in a normal range, two main issues needed to be considered in the interpretation of the results. Social factors can affect

the quality of life so that living in different cities may reduce the availability of many public, social, welfare, along with health and medical facilities, and thus affect the quality of life in mothers with sick children. Therefore, attention to this issue is necessary when comparing previous studies with this one. The separate attention to different dimensions is considered as the second issue. Although the participants in this study reported similar quality of life status compared with normal mothers in some of the dimensions including the physical functioning (the extent to which health limits physical activities), the role of emotional functioning (the extent to which emotional problems interfere with work or daily activities), and vitality (feeling full of energy rather than tired and worn-out), they achieved lower scores, respectively. Thus, it requires more attention on the part of healthcare providers. It is similar to the results of Hadi et al which revealed that the emotional role disorder and energy/vitality were affected more than the other dimensions.²⁷ It seems that a reduction in these dimensions could be related to the hyperactivity of children. However, further studies in this regard can be helpful.

Study Limitations

The use of a questionnaire and a self-report method can be mentioned as the limitation of this study. In addition, participants in our study were selected from only one center thus the results cannot be generalized to other contexts.

Conclusion

The quality of life in the mothers of children with special needs is one of the most important issues of the health of society. The results of this study, examining the quality of life in the mothers of ADHD children, showed that the quality of life in this group was not different compared to previous studies on normal mothers. However, the healthcare team should pay more attention to some dimensions of the quality of life. Similar studies are recommended to be conducted due to the lack of studies regarding this issue among the mothers of ADHD children. It is also suggested to study the quality of life

in fathers of ADHD children. Finally, it is recommended to examine the other aspects such as sleep quality and caregiver burdens in future studies.

Ethical Approval

The required ethical permissions for the study were obtained from the Research and Technology Deputy of Tehran University of Medical Sciences.

Conflict of Interest Disclosures

None.

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References

- Arjmandi S, Akikhavandi S, Sayehmiri K. Prevalence of attention deficit hyperactivity disorder among primary school children according to teachers and parents' report: systematic review and meta-analysis study. *Journal of Fundamentals of Mental Health*. 2015;17(5):213-21.
- Mostafae MR, Shokati M, Sarchami R, Rafiei H. Prevalence of attention deficit hyperactivity disorder in elementary school students in Hamadan. *Int J Epidemiol Res*. 2016;3(1):63-8.
- Oke OJ, Oseni SB, Adejuyigbe EA, Mosaku SK. Pattern of attention deficit hyperactivity disorder among primary school children in Ile-Ife, South-West, Nigeria. *Niger J Clin Pract*. 2019;22(9):1241-51. doi: 10.4103/njcp.njcp_599_18.
- Joshi HM, Angolkar M. Prevalence of ADHD in Primary School Children in Belagavi City, India. *J Atten Disord*. 2018. doi: 10.1177/1087054718780326.
- Nuri C, Akçamete G, Direktör C. The quality of life and stress levels in parents of children with attention deficit hyperactivity disorder. *European Journal of Special Education Research*. 2019;4(3):28-40.
- Efron D. Attention Deficit Hyperactivity Disorder: An Overview. In: Hiscock H, Sciberras E, eds. *Sleep and ADHD*. Academic Press; 2019. p. 1-28.
- Shoostary MH, Chimeh N, Najafi M, Mohamadi MR, Yousefi-Nourae R, Rahimi-Mvagher A. The prevalence of attention deficit hyperactivity disorder in Iran: a systematic review. *Iran J Psychiatry*. 2010;5(3):88-92.
- El-Nemr FM, Badr HS, Salem MS. Prevalence of Attention Deficit Hyperactivity Disorder in Children. *Science Journal of Public Health*. 2015;3(2):274-80.
- Polanczyk G, de Lima MS, Horta BL, Biederman J, Rohde LA. The worldwide prevalence of ADHD: a systematic review and meta-regression analysis. *Am J Psychiatry*. 2007;164(6):942-8. doi: 10.1176/ajp.2007.164.6.942.
- Lecendreux M, Konofal E, Faraone SV. Prevalence of attention deficit hyperactivity disorder and associated features among children in France. *J Atten Disord*. 2011;15(6):516-24. doi: 10.1177/1087054710372491.
- Shafaat A, Tirgari-Seraj A, Daneshpoor SMM, Hajian M, Khademloo M. Prevalence of attention deficit hyperactivity disorder in high-school students of Sari, Iran. *Journal of Mazandaran University of Medical Sciences*. 2013;23(104):12-8. [Persian].
- Moen OL, Hall-Lord ML, Hedelin B. Contending and adapting every day: norwegian parents' lived experience of having a child with ADHD. *J Fam Nurs*. 2011;17(4):441-62. doi: 10.1177/1074840711423924.
- Laugesen B, Groenkaer M. Parenting experiences of living with a child with attention deficit hyperactivity disorder: a systematic review of qualitative evidence. *JBIS Database System Rev Implement Rep*. 2015;13(11):169-234. doi: 10.11124/jbisrir-2015-2449.
- Yousefia S, Soltani Far A, Abdolalian E. Parenting stress and parenting styles in mothers of ADHD with mothers of normal children. *Procedia Soc Behav Sci*. 2011;30:1666-71. doi: 10.1016/j.sbspro.2011.10.323.
- Harazni L, Alkaissi A. The Experience of Mothers and Teachers of Attention Deficit/Hyperactivity Disorder Children, and Their Management Practices for the Behaviors of the Child a Descriptive Phenomenological Study. *Journal of Education and Practice*. 2016;7(6):1-21.
- WHOQOL: Measuring Quality of Life. Available from: <https://www.who.int/healthinfo/survey/whoqol-qualityoflife/en/>.
- Kousha M, Attar HA, Shoar Z. Anxiety, depression, and quality of life in Iranian mothers of children with autism spectrum disorder. *J Child Health Care*. 2016;20(3):405-14. doi: 10.1177/1367493515598644.
- Salehi F, Raji P, Mahmoodian M, Dadgar H, Baghestani AR. Quality of Life of Mothers of Children With Autism Spectrum Disorders and Its Relationship With Severity of Disorder and Child's Occupational Performance. *Journal of Modern Rehabilitation*. 2017;11(3):167-74.
- Ones K, Yilmaz E, Cetinkaya B, Caglar N. Assessment of the quality of life of mothers of children with cerebral palsy (primary caregivers). *Neurorehabil Neural Repair*. 2005;19(3):232-7. doi: 10.1177/1545968305278857.
- Taghizadeh H, Asadi R. Comparative analysis of quality of life in mothers of children with mental disability and mothers of normal children. *Middle Eastern Journal of Disability Studies*. 2014;4(2):66-74. [Persian].
- Chen VC, Yeh CJ, Lee TC, Chou JY, Shao WC, Shih DH, et al. Symptoms of attention deficit hyperactivity disorder and quality of life of mothers of school-aged children: the roles of child, mother, and family variables. *Kaohsiung J Med Sci*. 2014;30(12):631-8. doi: 10.1016/j.kjms.2014.09.001.
- Gharibi H, Fathi Azar E, Adib Y, Hatami J, Gholizadeh Z. Phenomenology of Mothers Experiences in Living with Children with ADHD Disorder. *Journal of Family Research*. 2011;7(1):5-22. [Persian].
- Cappe E, Bolduc M, Rouge MC, Saiag MC, Delorme R. Quality of life, psychological characteristics, and adjustment in parents of children with Attention-Deficit/Hyperactivity Disorder. *Qual Life Res*. 2017;26(5):1283-94. doi: 10.1007/s11136-016-1446-8.
- Mehralian H, Salehi S, Moghaddasi J, Amiri M, Rafiei H. The comparison of the effects of education provided by nurses on the quality of life in patients with congestive heart failure (CHF) in usual and home-visit cares in Iran. *Glob J Health Sci*. 2014;6(3):256-60. doi: 10.5539/gjhs.v6n3p256.
- Montazeri A, Goshtasebi A, Vahdaninia M, Gandek B. The Short Form Health Survey (SF-36): translation and validation study of the Iranian version. *Qual Life Res*. 2005;14(3):875-82. doi: 10.1007/s11136-004-1014-5.
- Nejat S. Quality of life and its measurement. *Iranian Journal of Epidemiology*. 2008;4(2):57-62.
- Hadi N, Saghebi A, Ghanizadeh A, Montazeri A. Assessment of health-related quality of life in mothers of children with attention-deficit hyperactivity disorder (ADHD), Shiraz, 2008-2009. *Shiraz E-Med J*. 2013;14(2):91-101.
- Azazy S, Nour-Eldein H, Salama H, Ismail M. Quality of life and family function of parents of children with attention deficit hyperactivity disorder. *East Mediterr Health J*. 2018;24(6):579-87. doi: 10.26719/2018.24.6.579.

29. Xiang YT, Luk ES, Lai KY. Quality of life in parents of children with attention-deficit-hyperactivity disorder in Hong Kong. *Aust N Z J Psychiatry*. 2009;43(8):731-8. doi: 10.1080/00048670903001968.
30. Zahedi M, Deris F. The quality of life in pregnant women in Farokhshahr city, 2012. *Journal of Clinical Nursing and Midwifery*. 2014;3(3):63-9. [Persian].
31. Amirabadizadeh Z, Sharifzadeh G, Moodi M. Middle-Aged Women's Quality of Life and Health-Promoting Lifestyle. *Mod Care J*. 2016;13(3):e11597. doi: 10.5812/modernc.11597.