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Assessment of Health-Related Quality of Life in Mothers of Children with Attention-Deficit Hyperactivity Disorder (ADHD), Shiraz, 2008-2009

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Abstract

Introduction: Attention-deficit/hyperactivity disorder (ADHD) is a fairly common disorder. Given the high prevalence of this disorder in children worldwide and its adverse effects on the quality of life of themselves and also their parents (especially their mothers we decided to study the quality of life these mothers.

Method: 100 cases were selected from the mothers of the children with ADHD referring to Hafez psychiatric clinic in Shiraz. The control group was randomly selected from the mothers of healthy 4th grade primary school students and matched with the case group. Quality of life was evaluated in both groups by use of “the short form health survey” (SF-36).

Results: In comparison of health-related quality of life in mothers of children with ADHD and the control group based on the number of children, in the case group the Physical functioning (PF), Role limitation Physical problems (RP), Bodily pain (BP) and General health (GH) dimensions and Physical Component Summary (PCS), had a higher mean score with the higher number of children; but the relationship was significant only in the PF dimension.

In the Vitality (VT), Social functioning (SF), Role limitation Emotional problems (RE) and Mental health (MH) dimensions and Mental Component Summary (MCS), the mean score were lower with the higher number of children. The relationship was significant in the VT, SF and RE dimensions and MCS.

Conclusion: This study shows that the quality of life in mothers of children with ADHD is significantly lower than the control groups.

Also, age of the mother and the number of affected children had a significant effect on further diminishing their quality of life.

However, higher education can be considered as a protective factor in these mothers.

Employment, although increases the quality of life in some dimensions (e.g. physical functioning), decreases it in some others (e.g. body pain).

Key words: Attention-deficit/hyperactivity disorder (ADHD); mother; quality of life; health-related quality of life (HRQOF); the short form health survey (SF-36)

Introduction

Attention-deficit/hyperactivity disorder (ADHD) is characterized by a pattern of diminished sustained attention and higher levels of hyperactivity-impulsivity in a child or adolescent than expected for someone of that age and developmental level (1).

ADHD is a fairly common disorder.

Reports on the incidence of ADHD in the United States have varied from 2 to 20 percent of grade-school children. A conservative figure is about 3 to 7 percent of pre-pubertal elementary school children. ADHD is more prevalent in boys.(2, 3).

Most children with ADHD have some social difficulties as well as other problems (academic, intrafamilial, etc). Socially dysfunctional children with

ADHD have significantly higher rates of comorbid psychiatric disorders and experience more problems with behavior in school as well as with peers and family members. Overall, the outcome of ADHD in childhood seems to be related to the degree of persistent comorbid psychopathology, especially conduct disorder, social disability, and chaotic family factors. Optimal outcomes may be promoted by ameliorating children's social functioning, diminishing aggression, and improving family situations as early as possible. (4, 5)

Apart from the effects this disorder has on the children themselves, it can be a great burden on their families as well, and especially their mothers. The educational problems of the child, and

also the social problems caused by the child such as damage to furniture, and their extraordinary hyperactivity which can bother others and take a lot of time and energy from the mothers to handle; lead to excessive toil, exhaustion, constant worry, disappointment and frustration and hence a lower quality of life in mothers. (6)

In a study by Yu-Tao Xiang, et al in 2009 they found out that compared with the general population in Hong Kong, significantly lower scores in physical, psychological, social and environmental quality of life (QOL) domains were found in the parents of children with ADHD. On multivariate analysis, for the children with ADHD, the severity of emotional and hyperactivity/inattention symptoms, and having a comorbid pervasive developmental disorder were significantly correlated with one or more domains of QOL; while for the parents, educational level, household monthly income and having major medical conditions were significantly correlated with one or more domains of QOL.(7)

Given the high prevalence of this disorder in children worldwide and its adverse effects on the quality of life of themselves and also their parents

(especially their mothers); and considering that no similar study had ever been conducted in Iran; we decided to study the quality of life these mothers by use of “the short form health survey” (SF-36). It evaluates the health condition in physical, psychological and social aspects. This way we can pinpoint the most affected dimensions of quality of life. This, in turn, may help improve the quality of life of the mothers of these patients.

Method

In this cross-sectional study, the case group was selected from the mothers of the children with ADHD referring to Hafez psychiatric clinic in Shiraz (a referral center in southwest Iran).

The diagnosis of ADHD was made by the psychiatrist based on DSM-IV-TR diagnostic criteria and by use of the Farsi version of Kiddie Schedule for Affective Disorders and Schizophrenia – Past and Present (K-SADS-PL).

The control group was selected from the mothers of healthy 4th grade primary school students. They were randomly selected from four education districts in Shiraz. They were matched with the case group.

The sample size for both groups was 100. Convenient sampling was used for the study group.

The exclusion criteria for both groups were:

1. The presence of a physical disorder or an acute social problem that could affect the quality of life. This was ruled out by an enquiry prior to filling out the questionnaire.
2. Taking care of the children in kindergarten.

To study the quality of life in the case and control groups a structured questionnaire was prepared based on SF-36 (8).

The questionnaire we used had two sections.

The first section comprised of some demographic data such as age, education, occupation, the number of children and the number of ADHD children as well as a specific code for each individual.

The second section had 36 questions and it assesses the health-related quality of life in 8 subscales:

Physical health:

- Physical functioning (PF)
- Role limitation physical problems (RP)

- Bodily pain (BP)
- General health (GH)

Mental health:

- Vitality (VT)
- Social functioning (SF)
- Role limitation emotional problems (RE)
- Mental health (MH)

It also yields results for the measurement of Physical Component Summary (PCS) and Mental Component Summary (MCS).

Higher scores (ceiling) in PF signify that the individual performs all types of physical activities including the most vigorous without limitations due to health;

RP: No problems with work or other daily activities;

BP: No pain or limitations due to pain;

GH: Evaluates personal health as excellent;

VT: Feels full of pep and energy all of the time;

SF: Performs normal social activities without interference due to physical or emotional problems;

RE: No problems with work or other daily activities;

MH: Feels peaceful, happy, and calm all of the time;

PCS: No physical limitations, disabilities, or decrements in well-being, high energy level, health rated "excellent";

MCS: Frequent positive affect, absence of psychological distress and limitations in usual social/role activities due to emotional problems, health rated "excellent".

Needless to say, lower scores (floor) imply the opposite of the abovementioned criteria.

The validity and reliability of the Farsi translation of this questionnaire had been confirmed for Iranian population by A. Montazeri, et al. (9)

The questionnaire was filled out by the researcher in a face to face interview with the mothers after the diagnosis was confirmed by the psychiatrist and the inclusion/exclusion criteria were considered.

As for the control group, first one primary school was randomly selected from each education district of Shiraz. 25 mothers were then randomly selected from each district.

The project was explained to the participating mothers in parent-teacher meetings. Then the mothers were contacted individually and were asked to

take part in the study. After considering the inclusion/exclusion criteria, the questionnaires were filled out by the researcher in face to face interviews.

Informed consent was gained from both case and control groups.

Data was statistically analyzed by SPSS-15 using independent t test, one way and ANOVA. Pearson correlation coefficient was used to evaluate the relationship of questionnaire dimensions with the age variable.

A significance level of 0.05 was determined.

The limitation of this study was lack of cooperation of the mothers which was mostly resolved after further explanations were offered by the researcher.

To observe ethical considerations all data was kept confidential and all the subjects not consenting to participate in the study were excluded from the study.

Results

We studied 100 mothers in our case group and another 100 in our control group.

In the case group the minimum age was 23, maximum age was 50 and the mean age was 35.04 with a standard deviation of 6.02.

In the control group the minimum age was 25, maximum age was 48 and the mean age was 33.49 with a standard deviation of 4.47.

You can find more detailed information in Table 1.

Table 2 shows the eight dimensions of health-related quality of life in mothers of children with ADHD in comparison with the control group.

In this study the control group had a higher score in PF, RP, GH, VT, SF, RE and MH dimensions and also in both PCS and MCS. But this difference was significant in PF, GH, VT, SF, RE and MH dimensions and also PCS and MCS.

In the control group the highest scores were those of PF and the lowest were those of BP. In the case group the highest scores were those of PF and the lowest were those of RE.

On the whole, higher scores signify a better health related quality of life and lower scores indicate a worse health related quality of life.

In comparison of health-related quality of life in mothers of children with ADHD and the control group based on the number of children, we found out that in the case group the PF, RP, BP and GH dimensions and PCS had a

higher mean score with the higher number of children; but the relationship was significant only in the PF dimension.

In the VT, SF, RE and MH dimensions and MCS the mean score were lower with the higher number of children. The relationship was significant in the VT, SF and RE dimensions and MCS.

In the control group the scores were lower in all dimensions with the higher number of children. The relationship was significant in both PCS and MCS and also in all dimensions but RE.

Regarding the number of afflicted children, the mean score was significantly higher only in the SF in the mothers with one affected child in comparison with two or more affected children.

In other words, the mean scores in mothers with two or more affected children were higher in half of the dimensions in comparison with mothers with one affected child. There is a significant relationship in the PF and GH dimensions.

In view of the mothers' age, in the control group, age has a significant linear relationship in the PF, RP, BP,

GH, VT, SF and MH dimensions and both PCS and MCS.

In the case group age had a significant linear relationship with PF, VT, SF and GH dimensions and the MCS.

Considering the mothers' occupation, in the mothers with ADHD children, the working mothers had significantly higher scores in the PF dimension and PCS in comparison with housewives. But the housewives had a higher score in the BP dimension.

However, there was no significant difference in the control group in any dimensions of health-related quality of life.

In regards to the mothers' education, in The case group, there was a significant relationship only in the PF and RP dimensions. The mothers with educations with bachelor's degree and higher scored higher in the PF dimension and the mothers with primary school education scored higher in the RP dimension.

In the control group in the BP and GH dimensions and PCS, the scores of mothers with higher education were significantly higher.

It is important to assess people's perception of their own health, in order to evaluate the efficacy of healthcare interventions and services.

In this study we compared the health-related quality of life of mothers of children with ADHD (the case group) with the control group. Also, the different variables of quality of life were assessed in each group.

The results, as expected, showed that the control group scored higher than the case group in most of the dimensions (PF, RP, GH, VT, SF, RE and MH) and also both PCS and MCS. But this difference was significant in PF, GH, VT, SF, RE and MH and also PCS and MCS.

As mentioned before, on the whole, higher scores signify a better health related quality of life and lower scores indicate a worse health related quality of life.

This is in keeping with the previous studies which show the quality of life of parents of children with ADHD to be lower than the control groups and to be less satisfied with their lives. (7) They experience more anxiety and depression, have a disrupted parent-child relationship, decreased parental

Discussion

affection, increased parental stress and eventually marital conflicts and family discords and dissolution of family bonds.

(6) They also have a higher risk of alcohol abuse. (10)

Table 1. The Distribution of Mothers of Children with ADHD and the Control Group Based on Education, Occupation, Number of Afflicted Children and Number of Children

		Case	Control
Number of Children	1	24	18
	2	57	39
	3	15	35
	4 or More	4	8
Number of Affected Children	0	0	0
	1	81	0
	2	19	100
Mothers' Education	Housewife	93	58
	Private Business	0	4
	Physician	0	6
	Teacher	2	16
	Employee	5	16
Mothers' Occupation	Illiterate	1	2
	Primary	29	15
	High School	56	26
	Associate Degree	10	26
	Bachelor's Degree	4	22
	Master's Degree and Higher	0	9

Table 2. Comparison of Health-Related Quality of Life the Case and Control Groups

The Dimensions of Quality of Life	Mean +- Standard Deviation		P
	Case	Control	
Physical functioning	74.25 +- 30.80	87.55 +- 9.16	0.00
Role limitation physical problems	52.50 +- 26.35	61.75 +- 31.06	0.05
Bodily pain	52.06 +- 26.28	48.11 +- 20.14	0.23
General health	42.08 +- 19.60	53.17 +- 17.95	0.00
Vitality	42.50 +- 17.87	56.20 +- 15.78	0.00
Social functioning	56.62 +- 24.96	64.00 +- 13.44	0.01
Role limitation emotional problems	19.66 +- 26.84	69.66 +- 20.15	0.00
Mental health	49.08 +- 16.98	63.64 +- 10.26	0.00

In the control group, the highest scores were those of PF and the lowest BP.

In the case group, the highest scores were those of PF and the lowest RE.

These mothers feel sad and depressed and some feel that nothing makes them happy. It seems that the educational problems of the child, and also the social problems caused by the child such as damage to furniture, and their extraordinary hyperactivity which can bother others and take a lot of time and energy from the mother to handle; lead to disappointment and frustration in mothers. This is especially true if the mother has any guilt feelings in this regard. (11)

This constant worry and toil can wear the mother out and lead to exhaustion which is manifested in the significantly lower scores in VT.

And understandably this can affect the social functioning of the parents in regards to relationships with relatives, friends, acquaintances and neighbors. This difference, also, is shown in the results. (12)

This study also shows that with an increase in the number of the children with ADHD the quality of life

diminishes in the VT, SF, RE dimensions and also MCS.

An interesting observation was that these mothers scored higher in the PF and GH dimension.

In the control group quality of life diminished in all dimensions (but RE) and both PCS and MCS with an increase in the number of children.

There was a significant linear inverse relationship between age and PF, RP, BP, GH, VT, SF, MH dimensions and also PCS and MCS in the control group and with PF, VT, SF, MH dimensions and MCS.

This means that with increase in age the PF, VT, SF, MH and MCS decreases in both groups. In the control group RP, BP, GH and PCS also decrease with age. Working mothers of children with ADHD scored higher than homemakers in PF and PCS; while homemakers had lower scores in BP. This means that although working mothers have a better physical functioning they experience more body pain. This could be because having a job outside home makes one feel more physically active and healthy, while at the same times adds an excess weight to the already heavy burden they have to bear everyday.

In mothers of children with ADHD, the ones with higher education scored higher in PF while the ones with lower education scored higher in RP. This could be because mother with higher education while having a higher physical functioning still experienced to have role limiting physical problems because of their own higher standards.

No prior studies had been conducted in regards to the number of affected children, mothers' age, education and occupation.

Conclusion

This study shows that the quality of life in mothers of children with ADHD is significantly lower than the control groups.

Also, age of the mother and the number of affected children had a significant effect on further diminishing their quality of life.

However, higher education can be considered as a protective factor in these mothers.

Employment, although increases the quality of life in some dimensions, decreases it in some others.

The results of this study underscore the importance of a more focused attention on the side of authorities in this regard

and the necessity of a better psychological, social and financial support for these mothers.

A better education for parents and teachers of these children can have a significant role in alleviating the problems they have to handle everyday.

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