

Journal of Psychology of woman

2022, Volume 3, Issue 2, Pp. 40-52

The effectiveness of treatment based on parent management training on psychological well-being and quality of life of mothers of children with attention deficit and hyperactivity disorder

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Abstract

Problems related to caring for children with attention deficit hyperactivity disorder (ADHD) can expose parents, especially mothers, to the risk of mental health problems. Few research pieces of evidence have addressed the role of educating parents and improving their psychological health in this disorder. Therefore, this research aimed to investigate the effectiveness of treatment based on parent management training on the psychological well-being and quality of life of mothers of children with ADHD. The current research is a field experiment with a pre-test-post-test design. Thirty mothers of children with ADHD were selected by available and targeted sampling methods in one of the special treatment centers for these children and randomly assigned to two experimental and control groups. At the beginning and end of the research, two groups were interviewed and answered the questionnaire on psychological well-being and quality of life. The experimental group was subjected to treatment intervention based on parent management training during nine sessions, one session per week. The results of ANCOVA analyses showed that the treatment based on parent management training was effective in increasing the psychological well-being score and the quality of life score of mothers of children with ADHD in the experimental group compared to the control group. It seems that by using treatment measures based on parent management training and generalizing it to different social contexts, it is possible to improve the management skills of mothers in interacting and caring for children with ADHD. It can be helpful as a potential capacity to increase psychological well-being and their quality of life in daily life.

Keywords: *treatment based on parent management training; psychological well-being; Quality of Life; Attention deficit hyperactivity disorder.*

Cite this article as:

Narimani, N., Najdi, L., & Pourtaleb, N. (2022). The effectiveness of treatment based on parent management training on psychological well-being and quality of life of mothers of children with attention deficit and hyperactivity disorder. *JPW*, 3(2): 40-52.



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Introduction

The presence of a child with specific behavioral problems and disorders in the family affects the family structure and the mental health of its members, especially the parents. The birth of a child with behavioral problems in the family is accompanied by chronic tension. The problems related to taking care of him can expose the parents, especially the mother, to the risk of psychological damage (Pujanaputa et al., 2021). One of the most important and common childhood behavioral disorders whose symptoms have a negative impact on the quality of life of parents and family functioning is attention deficit hyperactivity disorder (ADHD) (Penoles-Kalo et al., 2021).

ADHD is the most common neurodevelopmental disorder in children (Thapar & Cooper, 2016), which affects approximately 3-7% of school-aged children (American Psychiatric Association, 2013). Its global prevalence is reported to be about 7.2% (Thomas, Sanders, Friend, Blair, & Galzo, 2015). This disorder is characterized by three main features, i.e., attention deficit, hyperactivity, and impulsivity, which affect children's behavior and executive functioning (American Psychiatric Association, 2013). In fact, children with ADHD show symptoms such as lack of attention, hyperactivity, and impulsivity. These symptoms cause disturbances in many areas of a person's life, such as academic performance and social relations with others (Babinski & Sibley, 2022), which can adversely affect the quality of life and hinder their physical and mental health (Ross, 2006). Despite pharmacological treatment, symptoms persist and generally persists into adolescence and adulthood (American Psychiatric Association, 2013; Posner,

Polanski, & Sanga-Brock, 2020). So in adolescence and adulthood, a person is more exposed to the risk of antisocial behavior and drug and alcohol abuse (Babinski & Sibley, 2022).

Due to problems such as hyperactivity, restlessness, and inattention, children with ADHD have serious effects on their relationships with other family members and the general atmosphere that governs this environment. The presence of such behaviors in a child leads to reactions such as aggression, physical punishment and feelings of hostility from the parents toward the child. These reactions eventually lead to the exacerbation of the child's problems. In this way, there is a vicious cycle, which gradually makes the exact diagnosis of cause and effect very unlikely (Pujanaputta et al., 2021). Because the behavioral problems of children with ADHD are many, their parents experience more stress than parents of normal children and show more pathology (Li, Chen, Hsiao, Liu, & Yen, 2021). They may experience feelings of failure, anger, anxiety, stress, being ignored and being embarrassed (Salahuddin, Yusuf, Mohammad and Ibrahim, 2021). In fact, the stress in the family context, especially when it is chronic and stable in development, has significant effects on the well-being and quality of life of parents, children, and their relationship. So that the results of various research show that the parents of these children, especially the mothers, have a lot of psychological distress, low psychological well-being, and low quality of life (Sitianisa, Setiavati, Freyaha and Prabo, 2022; Mondal, Lock, Mazich, Bjorkli, and Laura-Carbon, 2021; Salahuddin et al., 2021; Lee et al., 2021; Moen, Hadlin, & Halllord, 2016). Failure to pay attention to it can have many

negative consequences for both parents and children with the disorder.

Psychological well-being refers to a person's potential to interact with others through the use of their communication abilities and skills and the responsibility of these processes in terms of life goals (Sikrikjee, 2016). In fact, psychological well-being is a process towards achieving one's potential abilities, which includes six dimensions of autonomy, environmental mastery, personal growth, positive relationship with others, purpose in life, and self-acceptance (Weiss, Westerhoff, & Bohlmeijer, 2016). Psychological well-being indicates optimal psychological functioning and learning from life experiences (Ryan & Deci, 2001). People with a high sense of psychological well-being mainly experience positive emotions and have a positive evaluation of the incidents and events around them. On the contrary, people with a low sense of psychological well-being evaluate incidents and life situations as unfavorable and experience more negative emotions such as anxiety, depression, and anger (Reif, 2016). Even people with chronic diseases have a high sense of psychological well-being. In contrast, people with a low sense of well-being like to play a role in society, create more passionate free time for themselves, and participate in more public activities (Kleiman, Chiara, Liu, Jager-Heiman, Choi, & Aloy, 2018). Regarding ADHD, numerous research pieces of evidence show that a child's ADHD symptoms can affect the psychological well-being of family members and their quality of life (Pisgood, Bhardwaj, Biggs, Brazer, Coghill, et al., 2016; Moen et al., 2016). Quality of life refers to the degree to which a person feels satisfied emotionally, socially, economically, spiritually, and physically, which includes physical,

psychological, and social dimensions. In fact, it is a feeling that a person has about his health status (Daly, Dolan, Poor, Bouhachala, Sim et al., 2020). Quality of life is people's understanding of their position in life in terms of culture, the value system in which they live, their goals, expectations, standards and priorities (Mondal et al., 2021). The term quality of life is generally ambiguous, as it can refer both to a person's experience of his life and to the living conditions in which people find themselves. Therefore, the quality of life is very subjective that cannot be observed by others and is based on people's understanding of different aspects of life (Dali et al., 2020). While one person may define quality of life in terms of wealth or life satisfaction, another person may define it in terms of capabilities (for example, having the ability to live well in terms of emotional and physical well-being). A person with a disability may have a high quality of life, while a healthy person who has recently lost their job may report a low quality of life (Jonkinson, 2020). In general, the meaning of quality of life is people's view of their health status and the extent to which they are satisfied with this status (Zhang, Qiu, Pan, Zaho, Zaho, et al., 2021). Multiple research pieces of evidence show that quality of life can be affected by ADHD symptoms (Penalos-Calo et al., 2021; Zhang et al., 2021).

Since the stress of caring for a child with ADHD is chronic and stable, it can have significant effects on the well-being and quality of life of parents, especially mothers, and expose them to the risk of psychological damage (Pujanaputa et al., 2021). Therefore, addressing the psychological issues of such mothers, including reducing anxiety, depression, stress and increasing hope, psychological well-being and happiness is

one of the most important things that can be done for these mothers in order to reduce their problems in interacting with their children. Among the various interventions that can help the parents of ADHD children, the treatment is based on parent management training. This treatment is done to increase the skills of parents to control the behavior of children with ADHD. Parental management training refers to ways in which one or both parents are trained to interact separately with their child (Deb, Ritzer, Roy, Acharya, Limbaugh, and Roy, 2020). In this method, all behavioral principles are used. Also, some educational components are emphasized such as learning about ADHD, emphasis on the parent-child relationship, increasing communication skills and understanding the principles of behavior management (increasing attention skills, behavioral reinforcement, use of reinforcers, deprivation). In general, considering that one of the most important elements in the treatment of ADHD is the consultation and education of child management to parents about the characteristics, causes, course, prognosis and treatment of this disorder. In parent management training therapy, parents, especially mothers, learn how to manage and influence their child's behavior (Kajabaf et al., 2015). Various research evidence shows that parent management training is effective in the following cases. Improving the overreaction parenting style of mothers of hyperactive children (Vahid & Khanjani, 2014); Self-criticism of mothers of mentally retarded children (Takloi & Jahangiri, 2020), general health of mothers of hyperactive children (Kajabaf and colleagues, 2015); Family functioning of children with ADHD (Sadeghi et al., 2011); Improving the stress index of parents of children with ADHD (Fazli et al., 2015); increasing the self-

efficacy of parents of children with Asperger's syndrome (Sofronoff & Farbotko, 2002); Self-efficacy and parenting of parents of hyperactive children (Yesonsari, Apintaveh, Pronopadol and Yangon, 2021); Improving the parenting behavior and stress of parents of hyperactive children and reducing their aggression (Danforce, Harvey, Yalzek and Mackey, 2006).

In sum, various research pieces of evidence show that treatment based on parent management training is an effective step in improving the psychological health of parents, especially mothers. Considering that most of the conducted research focused on the effect of teaching behavior management methods in reducing the behavioral problems of children with ADHD, and the role of parent education in order to improve their psychological health, especially the mothers of these children, has not been addressed much. In the present study, the important role of mothers' psychological health in raising children and improving family interactions was considered. In general, mothers of children with ADHD experience transitory psychological problems, which destroy parent-child interactions and create a vicious cycle. Just as the mother's reactions greatly influence the child, the child's behavior and mood can also greatly affect the mother's behavior and emotions toward her child. Therefore, this vicious cycle can be stopped by helping parents with therapy. Therefore, this research aimed to investigate the effectiveness of treatment based on parent management training on the psychological well-being and quality of life of mothers of children with ADHD.

Method

In order to carry out the current research, following the ethical considerations, stating the research's objectives, obtaining

permission from the Rushdieh Institute of Higher Education, and receiving a letter of introduction from it, one of the treatment centers for children with ADHD located in Tabriz city was referred. By obtaining permission and stating the objectives of the research from the management of the center, information about the number of children with ADHD was obtained. After confirming the definite diagnosis of children's ADHD, their mothers were interviewed about their willingness to participate in the research (N=89). Among them, 55 people were willing to participate in the research and were screened with psychological well-being and quality of life questionnaire. The selection criterion was a standard deviation score lower than the average in these two questionnaires. After analyzing the results of the questionnaires, 30 people were selected from among the specified people (N=34), according to the entry criteria and taking into account the possibility of the subject dropping out. After ensuring their consent to participate in the research as subjects, they were randomly assigned to two groups of parent management training and control (15 people in each group). Pre-test data were collected from both groups by explaining the instructions and ensuring confidentiality. Regarding the location of the intervention, one of the rooms of the counseling center was considered. Also, considerations of ethical principles, confidentiality and having the right to leave the experiment were fully explained to the experimental group. In order to avoid harm to the subjects, prior notification, the use of special women's taxis for the transportation of mothers, and the provision of material and spiritual incentives were considered. Finally, post-test data were collected from two groups (N=30) one week after the interventions. In order for the

control group to benefit from the treatment services, after collecting the post-test data, the treatment intervention based on parent training was held completely for them, and almost all the mothers in this group received all its sessions.

Materials

Psychological well-being scale (PWB-18, Ryff, 1980). The short form of the psychological well-being scale includes 18 items that measure mastery of the environment, self-acceptance, positive relationship with others, purposefulness in life, personal growth, and autonomy, which together represent a general factor of psychological well-being. The subject answers the items in a 6-point Likert scale (1 = completely disagree to 6 = completely agree). The minimum score of the questionnaire is 18 and the maximum score is 108, and a higher score indicates better psychological well-being. The validity and reliability of this questionnaire has been confirmed in various studies. Its retest reliability coefficient is 0.82 and its validity is well reported through correlation with other related constructs (Reif, 1989). Also, the internal consistency coefficient of this questionnaire has been reported as 0.91 using Cronbach's alpha (Khanjani et al., 2014). In the present study, the Cronbach's alpha coefficient of this questionnaire was 0.89.

Quality of life questionnaire (QoF-36, Ferrans and Power, 1992). The quality of life questionnaire includes 36 items that measure physical function, physical limitations, physical pain, general health, social functioning, mental problems, mental health, and vitality, which together show a general factor, the quality of life. The subject answers the items in a 5-point Likert scale (1=poor to 5=excellent). The minimum score of the questionnaire is 36 and the maximum

score is 180. A higher score indicates a better quality of life. The validity and reliability of this questionnaire has been confirmed in various studies. The internal consistency coefficient of this questionnaire using Cronbach's alpha is 0.83 and its validity is well reported through correlation with other related constructs (Ferrans & Power, 1992). Also, its reliability coefficient is reported to be 0.90 (Rafiei, Sharifian Sani, and Rafiei, 2014). In the present study, the Cronbach's alpha coefficient of this questionnaire was 0.85.

Implementation

The parent management training protocol (Barclay, 1997) was used for therapeutic intervention in the present study. This protocol was implemented similarly and as a group at first for the experimental group and after the completion of the research for the control group. For the experimental group, the intervention protocol was presented weekly in 9 sessions of 1.5 hours. In general, the regular schedule of each session was as follows: First, the current session started with reviewing the assignments of the previous session. Then the treatment steps were implemented and at the end, homework was presented. In Table 1, the general

strategies of this intervention are introduced during the sessions.

In the present study, one week after the pre-test, the treatment intervention based on parent management training was implemented for the experimental group for 9 sessions one day a week, each session lasting 90 minutes. At the same time, the control group did not receive any intervention until the post-test data collection. The post-test was also performed one week after the completion of the therapeutic intervention in both groups. Treatment intervention based on parent management training was considered as independent variable, psychological well-being variables and quality of life as dependent variables and pre-test values as control variables. For the final analysis of data, using SPSS version 24 software, descriptive statistics methods including mean and standard deviation as well as inferential statistics methods including univariate analysis of covariance (ANCOVA) were used in compliance with the assumptions of parametric statistics in order to statistically control the effect of the pre-test in the experimental and control groups. All analyzes were performed as two domains and at a significance level of 0.05.

جدول 1. پروتکل درمانی مبتنی بر آموزش مدیریت والدین

جلسه	هدف و محتوا
1	آشناسازی و برقراری رابطه درمانی و ارائه اطلاعاتی در خصوص آشنایی با ADHD.
2	پرداختن به شناخت بیش تر والدین از ارتباط خود با کودک، اصول کنترل رفتار و منطق آموزش والدین. همچنین توضیح شیوه های تأثیر گذاری و تأثیر پذیری والدین و کودک بر یکدیگر.
3	آموزش روش های افزایش توجه والدین به رفتارهای مثبت کودک همراه با آموزش تکنیک زمان مخصوص بازی، تاکید بر استفاده والدین از تقویت کننده های اجتماعی و تشویق استفاده از تعاملات و ارتباطات تقویت کننده و مثبت.
4	آموزش به کارگیری تکنیک های رفتاردرمانی در خارج از محدوده زمان مخصوص بازی و فراگیری روش های ترغیب کودک به انجام رفتارهای مثبت در این محدوده زمانی.
5	آموزش نحوه به کارگیری سیستم پاداش از طریق امتیازات و ژتون ها در منزل با تهیه لیست روزانه یا هفتگی از امتیازات و پاداش هایی که کودک دوست دارد (منوی تقویت) و فهرستی از کارهایی که کودک به طور روزانه یا هفتگی باید انجام دهد.

- 6 همراه کردن اصول تنبیه با روش‌های تقویت مثبت و آموزش انواع روش‌های تنبیه شامل بی‌توجهی به رفتار هدف، جریمه (حذف ژتون‌ها و امتیازات) و جبران رفتار منفی.
- 7 ارائه آموزش‌هایی برای گسترش روش محروم‌سازی به سایر رفتارها و انجام تمرینات توسعه در روش استفاده از محروم‌سازی برای سرپیچی‌های کودک از مقررات منزل و غیره و همچنین تعمیم تکنیک‌های آموخته شده به سایر کودکان خانه.
- 8 آموزش استفاده از اصول آموخته شده در کنترل رفتارهای ناسازگار و ناپسند در انتظار عمومی مثلاً در مغازه یا رستوران و همچنین پیش‌بینی مشکلات و آماده‌سازی طرح‌هایی برای استفاده از تقویت اجتماعی، ژتون‌ها، جریمه و محروم‌سازی در این موقعیت‌ها.
- 9 بحث در مورد کنترل بدرفتاری‌های آتی کودک، روش‌هایی برای همکاری با کارکنان مدرسه و روش‌های مقابله با مشکلات همراه بیش‌فعالی مثل شب‌اداری و همچنین بیان خلاصه‌ای از پیشرفت‌ها و تصمیم‌گیری نهایی برای اتمام مداخله.

Findings

The average (and standard deviation) age of the participants was 33 (4.153) in the age range of 28 to 40 years. About 55% of the participants had more than two children and most of them lived in a family of 4 to 5 people (0.89). Their education levels were 33.3% at the diploma level, 36.7% at the postgraduate level and 30% at the bachelor level. All of them were housewives (100 percent). In Table 1, the average and standard deviation of the two experimental and control groups in psychological well-being and quality of life are reported. Shapiro-Wilk test was used to check the assumption of normal distribution of these variables. The results of this test are shown in Table 2. As can be seen, the non-significance of this statistic in the variables indicates the normality of the distribution of the variables. Therefore, the use of parametric analyzes is unimpeded. Based on this, in order to investigate the effectiveness of treatment based on parent management training on psychological well-being and quality of life, one-variable analysis of covariance was used to examine overall

psychological well-being and overall quality of life with statistical control of pre-intervention differences.

A linear graph was used to check the hypothesis of linearity of psychological well-being and quality of life variables, and the output of the graph showed that the relationship between pre-test and post-test in these two variables is linear. Therefore, the assumption of linear relationship has not been violated. Based on this, the assumption of linearity is established and there is no obstacle to continuing the analysis.

F-test was used to check the homogeneity of the pre-test and post-test regression slopes of the variables in the experimental group and the control group. The results of this test showed that the F statistic for psychological well-being ($F=0.822$; $p>0.05$) and quality of life ($F=0.629$; $p>0.05$) is not significant. Therefore, the pre-test and post-test regression slopes are equal in the groups. Based on this, the assumption of homogeneity of the regression slope is established, and there is no obstacle to continuing the analysis.

Table 2. Descriptive indices of the variables

Variable	Phase	Group	Mean	Standard deviation	Shapiro-wilk statistics	Sig
Psychological well-being	Pre-test	Experimental	45.53	6.140	0.952	0.193
		Control	46.27	6.319		

Quality of life	Post-test	Experimental	53.87	5.817	0.972	0.593
		Control	46.00	6.188		
	Pre-test	Experimental	40.27	4.605	0.946	0.078
		Control	40.33	3.697		
Post-test	Experimental	50.40	5.422	0.967	0.472	
	Control	41.13	3.523			

Levene's test, comparing the variances of the two groups, was used to check the homogeneity of the variances of the experimental and control groups in the post-tests of psychological well-being and quality of life. The variances of the psychological well-being variable ($F=2.228$; $df_1=1$; $df_2=28$; $p>0.05$) and the quality of life variable ($F=0.882$; $df_1=1$; $df_2=28$; $p>0.05$) were equal in the experimental and control groups. Therefore, the assumption of homogeneity of groups is maintained and there is no obstacle to continue the analysis. The results of univariate covariance analysis (ANCOVA) to investigate the difference between the experimental and control groups in the psychological well-being post-test and the quality of life post-test with the statistical control of the pre-test of these variables are reported in Table 3. According to this table, the results show that there is a significant difference in psychological well-being between the experimental and control groups ($F=188.193$; $p<0.001$; $\eta^2=0.475$; $OP=1$). The eta square shows that the difference between the two groups in the post-test variable is significant, considering the

statistical control of the pre-test, and this difference is 0.475. That is, 47.5% of the variance related to the difference between the two groups in the post-test with the statistical control of the pre-test was due to the experimental conditions. Therefore, the treatment based on parent management training effectively increased the psychological well-being of mothers of children with ADHD.

Also, according to Table 3, the results show a significant difference in the quality of life between the two experimental and control groups ($F=126.651$; $p<0.001$; $df_2=0.427$; $P=1$). The eta square shows that the difference between the two groups in the post-test variable is significant, considering the statistical control of the pre-test, and this difference is 0.427. That is, 42.7% of the variance related to the difference between the two groups in the post-test with the statistical control of the pre-test is due to the experimental conditions. Therefore, the treatment based on parent management training effectively increased the quality of life of mothers of children with ADHD.

Table 3. ANOVA analysis results

Source	Sum of squares	Df	Mean squares	F statistics	Sig	Eta	Statistical Power
Psychological well-being	545.680	1	545.680	188.193	0.001	0.475	1
Quality of Life	652.877	1	652.877	126.651	0.001	0.424	1

According to the information in Table 5, there is no statistically significant difference between the effectiveness of the interventions ($p < 0.05$). While there is a

significant difference between the average scores of the control group and the group of cognitive behavioral therapy and the treatment of the ability to enjoy based on the

healthy human theory from pre-test to post-test ($p < 0.01$).

Regarding the effect of two methods of treatment on emotional divorce, it is observed that there is no significant difference between the mean of pre-test with follow-up and post-test with follow-up. In fact, it can be said that both methods of treatment of the ability to enjoy based on the healthy human theory and cognitive behavioral therapy have effectively reduced emotional divorce in women involved in emotional divorce only in the post-test phase. While it did not have a significant effect on the follow-up stage. Regarding the effect of two treatment methods on rumination, it can be said that only the intervention method of the ability to enjoy treatment based on the healthy human theory has effectively reduced rumination in women involved in emotional divorce in the post-test and follow-up phase. Also, its effect has remained stable over time.

In sum, regarding the effect of two methods of treatment on metacognitive beliefs, it can be said that both methods of treatment have effectively reduced inconsistent metacognitive beliefs in women involved in emotional divorce in the post-test and follow-up phase. Its effect has remained constant over time.

Discussion

The present study investigated the effectiveness of treatment based on parent management training on the psychological well-being and quality of life of mothers of children with attention deficit hyperactivity disorder. In general, the results showed that the treatment based on parent management training significantly increased psychological well-being and improved quality of life in mothers of children with ADHD. Based on this, a significant

difference was observed between the two therapeutic intervention groups and the control group in the post-test of these variables. The effect size was also large. Therefore, it seems that treatment based on parent management training is effective for increasing the psychological well-being and quality of life of mothers of children with ADHD.

According to the results of the present study, the mothers of children with ADHD in the therapeutic intervention group based on parent management training compared to the mothers of children with ADHD in the control group showed a significant increase in psychological well-being scores. This finding is in line with the research results of Kajbaf et al. (2015) and Fazeli et al. (2015), who showed that treatment based on parent management training is effective on the well-being and mental health of mothers of children with ADHD. In general, the parent management training program is effective for increasing the level of psychological well-being of mothers of children with ADHD. In this program, parents get to know the characteristics of these children, how to communicate with them correctly, increase attention to the child's positive behaviors, and use the token system to change behavior. Finally, they are introduced to using programs that are based on specific child behavior management skills (including attention, positive reinforcement, ignoring). This program makes parents reconsider their behavior and reactions. In fact, behavior management training helps mothers of children with ADHD to break the defective cycle of interaction with their child and to create supportive and positive interactional and confrontational patterns. It is conceivable that these achievements, in addition to helping children with ADHD,

also affect the mental health and well-being of mothers. Therefore, educating parents in this disorder can have many positive consequences. In many cases, changing the behavior of mothers requires less time and money, and sometimes you even have to initiate the change from them, especially if communication problems cast a shadow on the family or the mothers themselves suffer from a psychological disorder. The education of mothers leads to the improvement of their behavior and after that the child's behavior also changes and the destructive behaviors of mothers and hyperactive children are reduced. Therefore, these trainings help to reduce hyperactivity and ultimately increase the psychological well-being of all family members, especially mothers (Kajbaf et al., 2015).

Gaining knowledge and information about hyperactivity disorder and acquiring skills for child care, makes mothers consider the child's characteristics less stressful, that is, mothers' perception of how the consequences of a certain mood quality in their children changes. So that this training helps them how to help organize their child regarding the environmental situation, develop problem-solving skills and overcome frustration. It also teaches them to positively react to the child's effortful behavior and to use regular and calming methods. It is conceivable that all these cases can effectively increase the psychological well-being of mothers of children with ADHD (Fazeli et al., 2015).

According to the results of the present study, the mothers of children with ADHD in the therapeutic intervention group based on parent management training compared to the mothers of ADHD children in the control group showed a significant increase in scores in the quality of life post-test. A study based on the effectiveness of treatment based on

parent management training on the quality of life of mothers of children with ADHD was not available. However, this finding is in line with the results of Vahid and Khanjani (2014), Sadeghi, Shahidi and Khoshaei (2011) and Yesonsari et al. (2021). They showed that treatment based on parent management training effectively improves family functioning and parental relationships of mothers of children with ADHD.

In general, mothers of children with ADHD, who lack parenting skills, consider conflict and conflict with their children to be one of unpleasant experiences in their lives. These mothers are very worried about the condition of the child, which is annoying and intensifies the conflict between family members and ultimately leads to a decrease in the quality of life of the mothers. In fact, in a situation where mothers lack parenting skills and are constantly in conflict with their children, family isolation and avoiding family relationships with the surrounding people seem to be a natural thing. In some cases, mothers feel ashamed and embarrassed because of having an unfavorable relationship with their children, and they often have no motivation to appear in public situations, and sometimes they don't even like to talk about their child. Guilt and remorse are of the life experiences of this group of mothers. In some cases, these parents are worried about the continuation of their child's behavioral problems. For this reason, most of them feel disappointed and lack vitality and happiness in life (Gharibi, Sheidaei, and Rostami, 2016). Therefore, it is conceivable that the lack of ability in parenting skills leads to the limitation of parents' relationships and the decline of their quality of life. As observed in the present study, learning to see in this field can affect

the increase of parenting skills and consequently increase their quality of life.

In addition, stressful children reduce the level of family happiness, and parents of children with hyperactivity disorder, since they face more parenting challenges, have more stress than parents of healthy children (Danforth et al., 2006). Therefore, when the symptoms of their child's illness are reduced, their happiness and finally their quality of life is also increased. In fact, children with hyperactivity symptoms impose a lot of pressure and stress on parents, especially mothers. Therefore, by educating mothers and increasing their awareness in the field of communication with their children and reducing the symptoms that can be seen in children, mother's stress and depression will decrease and their self-confidence and happiness will increase. Based on this, the treatment based on parent management training by changing the parent-child relationship and increasing self-confidence in managing the child's behavior disrupts the cycle of defective behavior in the family and increases the quality of life of mothers.

In general, the current research was conducted with the aim of investigating the effectiveness of treatment based on parent management training on the psychological well-being and quality of life of mothers of children with attention deficit hyperactivity disorder, which was aimed at expanding and completing previous works and increasing the richness of the literature on parent training intervention in ADHD. The results showed that treatment based on parent management training can be effective in increasing the psychological well-being and quality of life of mothers of children with ADHD. These results can be due to various reasons mentioned above. Therefore, it seems that treatment based on parent

management training has positive benefits for mothers of children with ADHD and for children themselves.

The limitations of this study were the exclusiveness of the study to mothers, lack of follow-up, intervention in two separate groups, lack of examination of all the involved variables such as parenting skills, lack of generalizability to other populations due to age, gender, educational and geographical limitations. It is suggested that taking into account the mentioned limitations and taking into account the records, this research should be done again with both parents and with a long-term follow-up study. Also, the examination of other variables such as compatibility, happiness, self-concept, etc. should be taken into consideration. On the other hand, along with the treatment based on parent management training, other measures such as anger management and meditation and social skills and self-expression should be considered more widely in the treatment. Also, it is suggested to try to improve the health, well-being and quality of life of families with children with ADHD with proper and continuous education in the field of increasing the awareness of parents of children with ADHD, increasing parenting skills, reducing negative self-reflections and reducing their feelings of failure.

Ethics

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

Acknowledgement

The cooperation of all participants in the research is thanked and appreciated.

Conflict of Interest

According to the authors, this article has no financial sponsor or conflict of interest.

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