

Effect of Mindful Parenting Training for Parents with Children Having Attention Deficit Hyperactivity Disorder on Parenting Stress

Rania S. Elgendy, Maaly I. El Malky, Sabah M. Ebrahim

Psychiatric & Mental Health Nursing, Faculty of Nursing, Menoufia University, Egypt

Abstract

Background: Attention deficit hyperactivity disorder affecting both children and their parents. This study **aimed** to evaluate the effect of mindful parenting training for parents with children having attention deficit hyperactivity disorder on parenting stress. **Quasi-experimental** pre-test–post-test control group design has been implemented. A **purposive sample** has been used to select 100 parents (mothers or fathers) of children with attention deficit hyperactivity disorder. This study has been carried out at the psychiatric **outpatient clinic** of Menoufia University Hospital at Shebin El-kom District, Menoufia Governorate, Egypt. Three **tools** were used to gather the data; A structured interviewing questionnaire to assess socio-demographic characteristics of the parents and children characteristics, Parenting Stress Index – Short Form, and Interpersonal mindfulness in parenting scale. The **results** revealed that there was a highly statistically significant reduction in the total mean score of parenting stress among the study group after the intervention compared to the control group where p value ($p = 0.001$), and there was a statistical significant improvement in the level of mindfulness in parenting of the study group after the intervention compared to the control group. It was **concluded** that the mindful parenting training had statistically significant positive effect on reducing parenting stress and improving level of mindfulness of parents with children having attention deficit hyperactivity disorder. **Recommendation:** mindful parenting training should be incorporated into current treatment guidelines as a psychosocial option for families with attention deficit hyperactivity disorder.

Keywords: Mindful Parenting Training, Parenting Stress, Attention Deficit Hyperactivity Disorder.

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is common among childhood and manifested by a persistent pattern of inattention and/or hyperactivity-impulsiveness that distresses significantly the social and academic functioning of the child (Lo, et al ,2016). Attention deficit hyperactivity disorder affecting the school performance, the family life and peer interaction, where it can influence behavior, academic performance, social

and emotional adjustment resulting in lowering the level of academic performance, confidence and motivation which influence the treatment outcome (Sroubek., Kelly., & Li, 2013). Presence of ADHD within a family predicts higher instances of negative parent-child relationships, family conflict, marital dysfunction, negative thought patterns surrounding a child's behavior, higher instances of parental psychopathology, increased levels of parenting stress and negatively impact parenting practices (Glazier, 2017., Wang, 2016).

Parenting stress is the psychological and physiological responses arising from adaptation process to parenting demands. This is often experienced as negative, emotion, and beliefs toward and about the self and the child. Parenting demands usually exceed the resources available to them making it more difficult and a hindrance for them to succeed in the parent role. Mindful parenting trainings are effective to improve psychological distress (Khanduri, 2017). Mindful parenting is intentionally giving devotion to the interaction between child and parent particularly and non-judgmentally that can improve parent's awareness on the ongoing events, and lower the automatic negative reaction to children (Dodsworth, 2018), interpret the present moment, meet the needs of the child, while practicing self-regulation strategies (Stewart-Yates, 2014).

The role of nurse is important in helping families of children with ADHD; learn them how to manage stress and use effective coping methods to improve their confidence level and interaction with their children (Corthorn, & Milicic, 2016). "The psychiatric nurses serve a vital role by helping parents to learn mindfulness skills, look out for themselves, accept and respond effectively to difficult behaviors of the children. Also, promote parents' physical and psychological well-being and improve mental health of them (Tercelli, & Ferreira, 2019). The nurse can help parents to use structured limits to children negative behaviors (Barkley, 2013). Ask parents to disregard bothersome but not hazardous behavior, use the time-out technique after unwanted behavior, remove their attention from the children for a specified period of time, systematic removing their children privileges, such as television or play time. The consequences should be directed

calmly, immediately, and consistently, and balanced with reinforcement for positive behaviors (Abikoff, et al, 2015).

The prevalence of ADHD symptoms among Egyptian students at primary school in Shebin Elkom at Menoufia governorate about seven percent (6.9%) (Farahat, et al 2014). The prevalence of stress among mothers of ADHD children was 63% (Musa & Shafiee, 2007). Parenting stress regarding ADHD was prevailing, widespread and affecting the quality of life, family functioning, and psychological status (Bazzano, et al, 2015). High level of stress among parent increases the risk for depression, which negatively affecting parent-child attachment and communications that increase the risk for child abuse (Wang, 2016).

Incorporating mindfulness into parenting can help caregivers cope with parenting stress, shift their attention to the present, control their emotions and take appropriate decisions that lead to more positive interactions and relations. Increasing mindfulness help the parents to be more conscious to their actions and assume a nonjudgmental attitude towards themselves and their children (Corthorn & Milicic, 2016). Parents who are mindful have more satisfaction and enjoyment of the parent-child relationship (Tercelli & Ferreira, 2019). So this study aimed to evaluate the effectiveness of a mindful parenting training for parents with children having attention deficit hyperactivity disorder on their parenting stress.

Theoretical and Operational Definitions:

1-Parenting stress is the pressure or burden experienced by parents rooted in their interactions with their children.

It include physical and psychological reactions to the requirements of parenting (University of Minnesota Extension, 2015). In the current study parenting stress refers to the parent's feelings aroused when the requirements of parenting surpass their capabilities and resources .It will be measured according to parenting stress index that developed by Abidin's, (1995).

2- Mindful parenting training is the application of mindfulness-based interventions that lets parents to be more attentive and less reactive in their parenting Meppelink, et al (2016). In the current study it will be measured by interpersonal mindfulness in parenting scale that developed by Duncan (2007).

Subjects and Methods

The purpose of the study :

Evaluate the effect of mindful parenting training for parents with children having attention deficit hyperactivity disorder on parenting stress.

Research hypothesis:

The parents who will participate in mindful parenting training (study group) will have lower mean scores of parenting stress after implementation of the mindful parenting training than parents who don't receive the mindful parenting training (control group).

Research design:

Quasi-experimental pre-test–post-test control group design has been used to achieve the purpose of the study.

Setting:

This study was conducted at the psychiatric outpatient clinic of Menoufia University Hospital at Shebin El-kom District, Menoufia Governorate, Egypt.

Subjects:

A purposive sample of 100 parents(mothers or fathers) of children with ADHD who attending the psychiatric outpatient clinic of Menoufia University Hospital and fit the inclusion and exclusion criteria. Inclusion criteria; the parent (mother or father) who had a child between 5 and 12 years old with ADHD and agree to share in the study. Exclusion criteria; a child suffering from mental retardation or other major neurological and mental disorders, any history of chronic physical illness e.g. Diabetes mellitus or others. Because these illnesses may lead to stress and will interfere with the results.

The sample size was calculated using Epi Info (2000) program depending on the number of ADHD children attending psychiatric outpatient clinic of Menoufia university hospital were about 240 children per year and review of past literature Musa,& Shafiee (2007) ; illustrated the prevalence of stress among mothers of ADHD children was 63%.

Sample size was calculated by the following equation:

$$n = \frac{[DEFF * Np(1-p)]}{[(d^2/Z^2_{1-\alpha/2} * (N-1) + p * (1-p))]}$$

➤ (n) = Sample Size, DEFF = Design effect (for cluster surveys-DEFF): (1.5), d = Confidence level (95%) ,N = Population size, P = margin of error (0.05).

So calculated sample size was 100 parents of children with ADHD. The

calculated sample size was divided randomly into two equal groups (study and control groups) each group, 50 parents.

Tools of the Study : Three tools were utilized to accomplish the purpose of the study.

Tool (1): A structured interviewing questionnaire:

This questionnaire was developed by the researchers after reviewing pertinent literature to assess socio-demographic characteristics of the parents and their children such as; age, gender, residence, parent's education, family income, child age, gender, birth order and the number of siblings.

Tool (2): Parenting Stress Index – Short Form (PSI-SF)

This scale was originally developed by Abidin (1995) . It was used to measure parenting stress. It was a self-report questionnaire consisted of 36 items. It had three subscales; parental distress, parent-child dysfunctional interaction and difficult child. Items were rated on a 5-point Likert scale and modified by the researchers to be rated on 3-point Likert scale. The score ranged from (1) strongly disagree to (3) strongly agree. High values indicate high parenting stress. The scoring system; less than 54 indicated no stress, mild level of stress from 55-72, moderate level of stress from 73-90 and high level of stress from 91-108". It was translated into Arabic by the researchers and tested for its validity by a panel of experts .The reliability of the tool was done using test - retest reliability and proved to be strongly reliable at 0.85.

Tool (3): - Interpersonal mindfulness in parenting (IM-P) scale:

This scale was originally developed by Duncan (2007). It was a self-report questionnaire, consisting of ten items that measure mindful parenting regarding three domains: (a) awareness and present-centered attention during parenting interactions (four items); (b) non-judgment (three items) and (c) no reactivity to culturally accepted children behavior (three items) . "The items were rated on a 5-point Likert scale and modified by the researchers to be rated on three-point Likert scale; from one (never true) to three (always true). and the score was reversed in the negative items (1,4,7,9) ,so that a higher score on a subscale reflected higher levels of that particular mindful parenting dimension. The scoring system; less than 14 indicated low mindful level, mild level from 14 – 19, moderate level from 20-24 and high level from 25-30. It was translated into Arabic by the researchers and tested for its validity by a panel of experts. The reliability of the tool was done using test - retest reliability and proved to be strongly reliable at 0.90.

Ethical consideration:

Ethical approval was obtained from the ethical and rehearsal research committee of the faculty of Nursing, Menoufia University. Informed consent was taken from each participant after receiving detailed information about the purpose of the study and assure maintaining anonymity and confidentiality of the subject's data.

Data Collection:

An official permission was obtained from the head of the outpatient clinic of Menoufia University Hospital,

Shebin Elkom after explanation of the aim of the study. A pilot study was carried out with 10% of the total sample to test the clarity of the tools and excluded from the main study sample. The study was carried out from the beginning of September 2019 to the end of November 2019. The researcher collected the data during morning, each group attend once a week from 10 to 11.30 AM. The current study was carried out in three phases: assessment phase, implementation, and evaluation phase.

Assessment phase:

- A guide booklet was prepared by the researchers after reviewing literature as electronic studies, books, and periodicals. The researchers selected private place for the interview. Assessment was done using the parenting stress index, interpersonal mindfulness in parenting scale on 100 parents. Then they were randomly allocated to two equivalent groups' (control group, and the study group) using the coin tossing. The control group (50) who don't receive mindful parenting training and the study group (50) who received mindful parenting training.

The implementation phase:-

- The study group (50 parents) were divided into five large groups each group contain 10 parents, each group attend once a week from 10 to 11.30 AM. The study group was attended twelve consecutive weekly sessions, so implementation of program sessions was achieved within 3 months. Lecture, discussions, brain storming, and demonstration, re demonstration, giving examples & modeling were used as teaching methods. Data show, video, pictures and booklet were used as media. After each session, the researcher

provided summary, took feedback and gave the parents homework.

The mindful parenting training description:

General objective:

Reduce parental stress in parents of children with attention deficit hyperactivity disorder

Specific objectives : Upon completion of this training, participants will be able to identify the concept, symptoms and causes of ADHD, state the problems caused by such disorder, apply the skills of mindful parenting as (listening with full attention, nonjudgmental acceptance of self and child, emotional awareness of self and child, self-regulation in the parenting relationship, and compassion for self and child),applying the methods of helping their child to increase attention and reduce hyperactivity, applying the strategies of behavior modification with their children, and practicing relaxation techniques ;deep breathing exercise, body scanning, progressive muscle relaxation & meditation) .

Session (1): This session aimed to encourage parents to actively participate in the study. The researcher welcomes parents, introduced herself and described the purpose of the study then oral informed consent was taken for participation in the study. The pretest parenting stress index, interpersonal mindfulness in parenting scale were given to them (pre intervention assessment).For the study group the researcher oriented the parents about the program (12 sessions, one session every week, for 60-90 minutes) for each five large groups, and setting an agreement on the rules of the sessions that followed by parents, as,

confirming the privacy and confidentiality of research information, commitment to sessions dates and time, avoiding interruptions while others talk, avoiding sarcasm about other' opinions and applying essential activities during every session.

Session (2): This session aimed to providing the parents with information about definition, causes, symptoms and problems caused by ADHD. The researchers welcomed all parents and thank them for their attendance. The researchers asked parents to answer the following questions; what is ADHD? What are the symptoms of ADHD? After listening to their answers, the researcher provides a detailed explanation of the definition and symptoms of ADHD, causes and problems caused by such disorder.

Session (3): This session aimed to help the parents to apply the skills of good communication, and nonjudgmental acceptance of self and child. The researchers provided a detailed explanation about steps & ways of nonjudgmental acceptance of self and child, then the researchers provided a detailed explanation about the steps of good communication with the child such as; good listening by closing the television and trying to show him that the parents are listening to him and that they are interested in his words through the movement of the head or say yes. Letting the child continues talking to the end without interrupting. Be at the level of the child when talking and using direct physical contact through the touch of tenderness and entanglement of hands and hugs and putting the hand on the child's shoulders. It strengthens relationships based on love, facilitates the language of emotional communication and facilitates understanding. Talking with the child

about special things in a quiet room. Trying to show how they feel about what he said, do not trying to criticize the child and help him to express his feelings through using art.

Session (4): This session aimed to help the parents to apply the skills of self-regulation in parenting relationship such as; learning to ignore, stopping before responding during anger, notice their feelings when they conflict with the child and listening carefully to the child's point of view.

Session (5): This session aimed to help the parents to apply the skills of compassion for self and child. Then, the researcher began to illustrate self-compassion strategies; thinking about how to deal with the other person, observing the language, using physical movements to calm, remembering a set of sentences of sympathy, practicing meditation. At the end of the session, the researcher assigned homework for parents and asked the parents to apply these skills.

Session (6): This session aimed to help the parents to apply the methods of increasing child attention; providing an environment free of distractions for task efforts (turn off the TV, radio and computer) as possible ,providing one-to-one support, beginning with easy and simple instructions , asking child to repeat instructions and making good eye contact ,trying writing a checklist for multiple tasks and breaking longer tasks into small steps, setting goals that permit client to complete the task, after completing each step, giving a break for playing. At the end of the session, the researcher asked the parents to apply these methods with their children.

Session (7): This session aimed to helping the parents to apply the methods of helping their child to decrease hyperactive behavior, asking the child to do a task as putting dishes away , running before and after school, squeezing a stress ball, or playing at his or her seat, limiting screen time in favor of time for movement, regular physical exercise (cycling, swimming, playing tennis) .giving consequences immediately after misconduct, discipline for bad behavior was done by separating the child's behavior from the child's person. At the end of the session, the researcher assigned homework for parents and asked the parents to apply these methods with their children.

Session (8): This session aimed to help the parents to apply the strategies of behavior modification with their children (modifying the unwanted behavior of the child and increasing desirable behaviors.) Reinforcing desirable behavior by using positive verbal and material support for appropriate behavior, system of points and stars, developing written contracts for specific behavioral change and corresponding prizes. To modify the unwanted behavior of the child correctly using "timeouts" to diminish undesirable behaviors or using deprivation through exclusion of something a child liked if he conducted wrong behavior like taking his favorite toy for some time if he hit his sister. The researcher assigned homework for parents and asked the parents to apply these methods with their children.

Session (9): This session aimed to explain and apply the steps of deep breathing exercise. The researcher demonstrated deep breathing exercise in front of the parents. The researcher showed photos that illustrating how to practice deep breathing exercise. Then, the researcher acted as a model to

illustrate steps of deep breathing exercise to parents. The researcher asked each parent to do the deep breathing exercise in the session and correct any error. The researcher asked the parents to apply deep breathing exercise at home.

Session (10): This session aimed to explain and apply the steps of progressive muscle relaxation. The researcher demonstrated progressive muscle relaxation in front of the parents. The researcher showed photos that illustrating how to practice progressive muscle relaxation. Then, the researcher acted as a model to illustrate steps of progressive muscle relaxation to parents. The researcher asked each parent to apply progressive muscle relaxation in the session and correct any error. The researcher asked the parents to apply progressive muscle relaxation at home.

Session (11): This session aimed to explain and apply the steps of meditation. The researcher demonstrated meditation in front of the parents. The researcher showed photos that illustrating how to practice meditation. Then, the researcher acted as a model to illustrate steps of meditation to parents. The researcher asked each parent to apply meditation in the session and correct any error. The researcher asked the parents to apply meditation at home.

Session (12):

Evaluation phase, This session aimed to evaluate the effect of a mindful parenting training for parents with children having attention deficit hyperactivity disorder on parenting stress. In this phase, the researcher welcomed all parents and thanked them for attendance and completing the sessions and provided the research tools (Parenting Stress Index, Interpersonal mindfulness in parenting

scale) (Post-Test) to evaluate a mindful parenting training effectiveness.

Statistical Analysis: Data was entered and analyzed using Statistical Package of Social Science (SPSS) version 20. Quantitative data were presented in the form of mean (\bar{X}), standard deviation (SD), and qualitative data were presented in the form numbers and percentages. Chi-square test (χ^2), Fischer exact test, Pearson correlation (r) were used to find out the possible association between studied factors and the targeted disease. $P < 0.05$ was considered statistically significant and P value < 0.001 was highly significant while $P > 0.05$ indicated non-significant.

Results

Table (1): Revealed no statistically significant difference between the study and control groups regarding to all their socio-demographic characteristics where p value $p > \% 0.05$.

Figure (1): Clarified that there was no statistically significant difference in parenting stress level between study and control groups before nursing intervention where p value ($p = 0.422$). While there was a highly statistically significant reduction in the total mean score of parenting stress among the study group after the intervention compared to the control group where p value ($p = 0.001$).

Figure (2): showed that there was no significant difference in the level of mindfulness in parenting between study and control groups before the intervention $p > \% 0.05$. While there was a statistically significant improvement in the level of mindfulness in parenting of the study group after the intervention compared to

the control group where p value ($p = 0.001$).

Table (2): Showed that there was no statistically significant correlation between total stress level and mindfulness of the study group in pre-test where p value ($p = 0.776$). While there was a highly statistically significant negative correlation between total stress level and mindfulness in post-test where p value ($p = 0.001$).

Discussion

The ADHD affecting the children can affect the psychological status of their parents. Mindful parenting training permits parents attentively observe their children without prejudgment, and being sensitive to the needs of their children (Chan, et al, 2018). Therefore, the current study aimed to evaluate the effect of a mindful parenting training for parents with children having attention deficit hyperactivity disorder on parenting stress.

The existing study revealed that there was no statistically significant difference between the study and control groups regarding socio-demographic characteristics. This reflected that the study and control groups had the same criteria. In the same line with these results **Potharst, et al (2019)**, they found no significant differences in demographic features between the two groups. Also, **Behbahani, et al (2018)**, revealed no statistically significant differences in terms of demographic variables between the intervention and control groups regarding age, sex and residence.

The current study revealed a highly statistically significant reduction in

parenting stress score among the study group after the intervention compared to the control group where p value ($p = 0.001$). This may be due to the skills that parents applied through mindful parenting training; as listening to the child, attentiveness, self-regulation, compassion strategies, also, strategies of behavior modification help them to modify the unwanted behavior of their children and increase desirable behaviors. Relaxation techniques such as deep breathing exercise, progressive muscle relaxation and meditation that reduce muscle tension, emotional distress and improve psychological wellbeing, this decrease stress and its negative consequences for parents. This study result was supported by **Behbahani, et al (2018)**, they showed a decrease in parenting stress, negative parent-child interactions, and children's problematic characteristics in the intervention group when compared with the comparison group. Also, **Corthorn, (2018)**, showed a significant reduction in general and parental stress in the intervention group when compared with the comparison group". Beside **Van der Oord., Bogels., & Peijnenburg, (2012)**, they showed a significant reduction in parental over reactivity and parenting stress between pre-test and eight-week follow-up". Moreover, **Mathis, et al (2018)** "they showed a significant decrease in parental distress and total parent stress at post-intervention ($P = .05$)". Also, **Bogels, et al (2014)** "they revealed reductions in parental stress post intervention than before".

Regarding the effect of mindful parenting training on interpersonal mindfulness of the study subjects, The current study revealed no significant difference in the level of mindfulness in parenting between study and control groups before the intervention. While, there was a statistically significant

improvement in the level of mindfulness in parenting of the study group after the intervention compared to control group. This indicated that the mindful parenting training was within the interest and the needs of the parents under study. Nursing intervention permits the parents to pause and rely on parenting skills that consider intrapersonal and interpersonal aspects of the parent-child relationship. This skill allowed the studied parents to manage their responsibilities, tasks, demands of parenting, so it had positive effect in increasing parents mindfulness. This result was consistent with **Potharst, et al (2019)**" they reflected that the online mindful parenting intervention had significant effect on parenting stress, depressive symptoms and anxiety than a waitlist control group. Also, **Bazzano, et al (2015)**, they reflected significant improvement in mindfulness, self-compassion and well-being among parents after intervention than control group. Also, **Abou-Abdou, et al (2018)**, they revealed highly statistically significant difference between pre/post intervention score of mothers mindfulness in parenting where P value < 0.001 . Beside **Meppelink, et al, (2016)**, they signposted a significant increase in overall mindfulness among parents, at the post-test.

The current study presented no statistically significant correlation between total parental stress level and mindfulness of the study group before intervention. While, there was a highly statistically significant negative correlation between total parental stress level and parental mindfulness after the intervention, this indicated the effectiveness of the mindful parenting training. This could be due to when one is being mindful there is an increase in attunement and a parent is better able to focus on their child. Through focusing

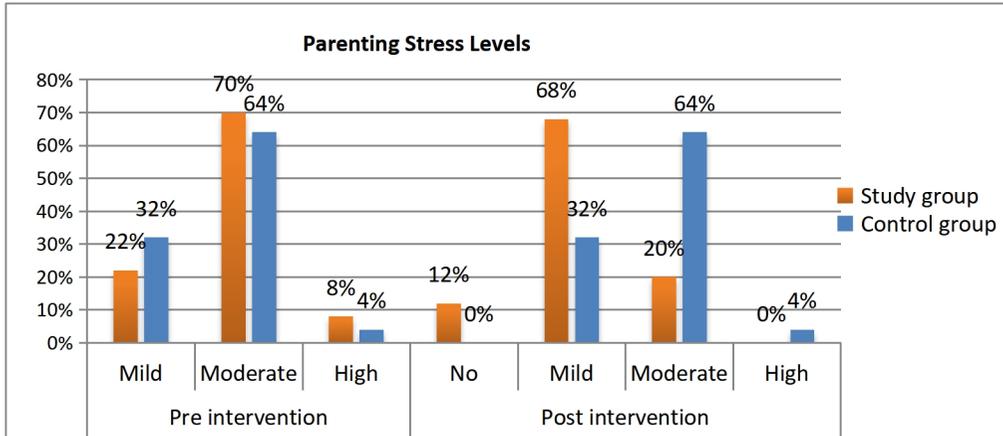
more on children, the parents are able to reinforce their relationship and increase positive, helpful communication. Also, through mindful parenting, the parents may be able to increase positive relationships between themselves and their children, which may lead to a better

sense of well-being and decrease stress level. This result was in the same line with Beer., Ward., & Moar, (2013), they revealed a significant negative correlation between mindful parenting and parental stress.

Table (1): Comparison of socio-demographic characteristics for study and control groups (n = 50 for each group)

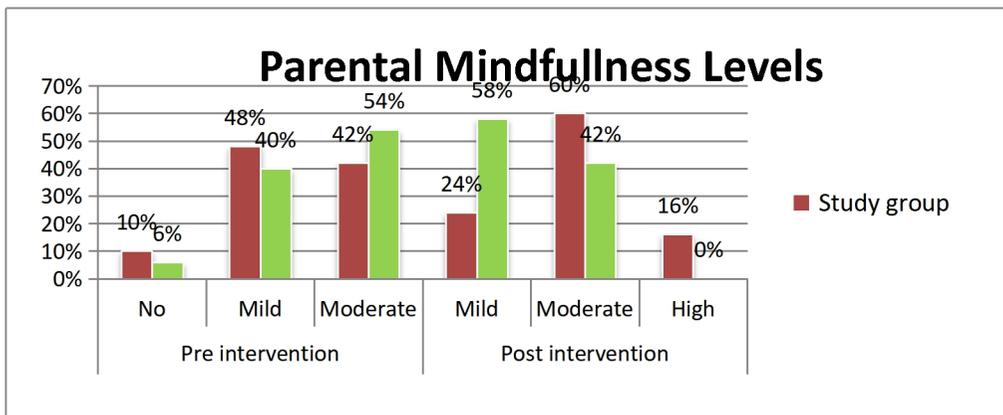
Socio - demographic characters		Study group (n=50)		Control group (n=50)		Total (N=100)		Test of sig.	P value
		No.	%	No.	%	No.	%		
Age of child / years	Mean \pm SD	7.86 \pm 1.90		8.18 \pm 1.52		8.02 \pm 1.72		t-test	0.356
	Range	5 - 12		6 - 12		5 - 12		0.928	(NS)
Gender	Male	32	64.0	30	60.0	62	62.0	χ^2	0.680
	Female	18	36.0	20	40.0	38	38.0	0.170	(NS)
Number of sibling	Non	5	10.0	0	0.00	5	5.00	χ^2	0.145
	One	8	16.0	10	20.0	18	18.0	5.39	(NS)
	Two	25	50.0	26	52.0	51	51.0		
Birth order	Three	12	24.0	14	28.0	26	26.0		
	1 st	26	52.0	33	66.0	59	59.0	χ^2	0.107
	2 nd	16	32.0	15	30.0	31	31.0	4.46	(NS)
School type	3 rd	8	16.0	2	4.00	10	10.0		
	Governmental	37	74.0	41	82.0	78	78.0	χ^2	0.334
Father age/ years	Private	13	26.0	9	18.0	22	22.0	0.932	(NS)
	Mean \pm SD	39.4 \pm 6.87		35.9 \pm 7.0		40.5 \pm 7.02		t-test	0.125
Father education	Range	29 - 56		32 - 56		29 - 56		1.54	(NS)
	Illiterate	2	4.00	0	0.00	2	2.00	χ^2	0.229
Father job	Read& write	15	30.0	10	20.0	25	25.0	4.32	(NS)
	Secondary	21	42.0	29	58.0	50	50.0		
	University	12	24.0	11	22.0	23	23.0		
Mother age/ years	Work	48	96.0	44	88.0	92	92.0	χ^2	0.185
	Not work	2	4.00	3	6.00	5	5.00	3.37	(NS)
	Die	0	0.00	3	6.00	3	3.00		
Mother education	Mean \pm SD	34.1 \pm 6.39		35.9 \pm 5.04		35.0 \pm 5.80		t-test	0.117
	Range	24 - 48		30 - 50		24 - 50		1.58	(NS)
Mother job	Illiterate	3	6.00	2	4.00	5	5.00		
	Read& write	11	22.0	12	24.0	23	23.0	χ^2	0.504
	Secondary	19	38.0	25	50.0	44	44.0	2.34	(NS)
Residence	University	17	34.0	11	22.0	28	28.0		
	Work	15	30.0	19	38.0	34	34.0	χ^2	0.398
Family income	Not work	35	70.0	31	62.0	66	66.0	0.713	(NS)
	Urban	19	38.0	19	38.0	38	38.0	χ^2	1.00
Family income	Rural	31	62.0	31	62.0	62	62.0	0.00	(NS)
	Enough	20	40.0	23	46.0	43	43.0	χ^2	0.545
	Not enough	30	60.0	27	54.0	27	57.0	0.367	(NS)

Figure (1): Comparison of parenting stress levels among study and control groups pre and post intervention (n = 50 for each group).



$\chi^2=1.72$ for pre & $P=0.422$. $\chi^2=24.1$ for post & $P=0.001$

Figure (2): Comparison of parental mindfulness levels among study and control group pre and post intervention (n = 50 for each group).



$\chi^2=1.61$ for pre & $P=0.446$, $\chi^2=16.6$ for post & $P=0.001$

Table (2): Pearson correlation between the mean scores of parenting stress and total parental mindfulness among the study group pre and post intervention

Studied Variable	Total parenting stress			
	Pre - intervention r	P value	Post - intervention r	P value
Total Parental Mindfulness	0.041	0.776 (NS)	-0.451	0.001 (HS)

HS: High significant, P value ≤ 0.001

Conclusion

The current study concluded that the mindful parenting training had statistically significant a positive effect on reducing stress level and improving level of mindfulness of parents with children having attention deficit hyperactivity disorder.

Recommendation

This study recommended that mindful parenting training should be incorporated into current treatment guidelines as a psychosocial option for families with attention deficit hyperactivity disorder. Replication of this study on a larger probability sample from different geographical areas is mandatory to help for generalization of the results.

Financial support

No funding was received

Conflicts of Interest Disclosure

The authors declare that there is no conflict of interest.

References

Abidin, R. (1995). Parenting Stress Index, Third Edition: Professional Manual. Odessa, FL: Psychological Assessment Resources. <http://doi.org/10.4236/oalib.1102791>

Abikoff, H., Thompson, M., Laver Bradbury, C., Long, N., Forehand, R. L., Miller Brotman, L., Klein, R., Reiss, P., Huo, L., & Sonuga-Barke, E. (2015). Parent training for preschool ADHD: a randomized controlled trial of specialized and generic programs. *Journal of Child Psychology and Psychiatry*, 56(6), 618-631. <http://doi.org/10.1111/jcpp.12346>.

Abou-Abdou, S., Soltan, M., Ali, S., & Abed

Elmenem, H. (2018). Mindfulness Based Intervention Program for Mothers Of Children With Attention Deficit Hyperactivity Disorder. *OSR Journal of Nursing and Health Science (IOSR-JNHS)*, 7(5), 39-49. <http://doi.org/10.9790/1959-0705013949>

Barkley R. (2013). Defiant children: A clinician's manual for assessment and parent training. New York: Guilford Press. Available at : <https://www.guilford.com/books/Defiant-Children/Russell-Barkley/9781462509508>

Bazzano, A., Wolfe, C., Zylowska, L., Wang, S., Schuster, E., Barrett, C., & Lehrer, D. (2015). Mindfulness based stress reduction (MBSR) for parents and caregivers of individuals with developmental disabilities: a community-based approach. *Journal of Child and Family Studies*, 24(2),

- 298-308.
<https://doi.org/10.1007/s10826-013-9836-9>
- Beer, M., Ward, L., & Moar, K. (2013).** The relationship between mindful parenting and distress in parents of children with an autism spectrum disorder. *Mindfulness*, 4(2), 102-112. <https://doi.org/10.1007/s12671-012-0192-4>.
- Behbahani, M., Zargar, F., Assarian, F., & Akbari, H. (2018).** Effects of Mindful Parenting Training on Clinical Symptoms in Children with Attention Deficit Hyperactivity Disorder and Parenting Stress: Randomized Controlled Trial. *Iranian journal of medical sciences*, 43(6), 596–604. Available at: <https://pubmed.ncbi.nlm.nih.gov/30510336/>
- Bogels, S., Helleman, J., van Deursen, S., Romer, M., & van der Meulen, R. (2014).** Mindful parenting in mental health care: effects on parental and child psychopathology, parental stress, parenting, coparenting, and marital functioning. *Mindfulness*, 5(5), 536-551. <https://doi.org/10.1007/s12671-013-0209-7>
- Chan, S., Zhang, D., Bogels, S., Chan, C., Lai, K., Lo., & Wong, S. (2018).** Effects of a mindfulness-based intervention (MYmind) for children with ADHD and their parents: protocol for a randomized controlled trial. *BMJ open*, 8(11). <http://dx.doi.org/10.1136/bmjopen-2018-022514>
- Corthorn, C. (2018).** Benefits of mindfulness for parenting in mothers of preschoolers in Chile. *Frontiers in psychology*, 9, 1443. <https://doi.org/10.3389/fpsyg.2018.01443>
- Corthorn, C., & Milicic, N. (2016).** Mindfulness and parenting: a correlational study of non-meditating mothers of preschool children. *Journal of Child and Family Studies*, 25(5), 1672-1683. <https://doi.org/10.1007/s10826-015-0319-z>
- Dodsworth, C. (2018).** Association of Mindful Parenting Dimensions, Positive Parenting, Child Reactivity, and Parent Stress. Available at: <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=7131&context=dissertations/>
- Duncan, L., (2007).** Assessment of mindful parenting among parents of early adolescents: Development and validation of the Interpersonal Mindfulness in Parenting scale. The Pennsylvania State University. Available at : https://etda.libraries.psu.edu/files/final_submissions/3737
- Farahat, T., Alkot, M., Rajab, A., & Anbar, R. (2014).** Attention-deficit hyperactive disorder among primary school children in Menoufia Governorate, Egypt. *International journal of family medicine*, 2014. <http://doi.org/10.1155/2014/257369>
- Glazier, J. (2017).** Knowledge is Power: Examining the Association Between Parents' Knowledge of Attention-Deficit/Hyperactivity Disorder (ADHD), Parenting Stress, and Symptoms of Child Anxiety (Doctoral dissertation, University of Calgary). <http://doi.org/10.11575/PRISM/26707>
- Khanduri, V. (2017).** Effectiveness of Educating Parents of Children with Attention Deficit Hyperactivity Disorder (ADHD) on Children's Behavioral Issues and the Stress Experienced by Parents: An Integrative Review. Available at : <https://scholarworks.umass.edu/cgi/view>

content.cgi?article=1134&context=nursing_dnp_capstone

- Lo, H., Wong, S., Wong, J., Wong, S., & Yeung, J. (2016).** The effect of a family-based mindfulness intervention on children with attention deficit and hyperactivity symptoms and their parents: design and rationale for a randomized, controlled clinical trial (Study protocol). *BMC psychiatry*, 16(1), 65. <http://doi.org/10.1186/s12888-016-0773-1>
- Mathis, E., Shapiro, A., Hawkins, J., Charlot-Swiley, D., Lingo, K., Spencer, T., & Biel, M. (2018).** 1.40 Cultivating Mindfulness in Parents of Young Children: Effects of a Mindful Parenting Intervention Pilot in a Low-Income Community. *Journal of the American Academy of Child & Adolescent Psychiatry*, 57(10), S148. <http://doi.org/10.1007/s10935-009-0185-9>
- Meppelink, R., de Bruin, E., Wanders-Mulder, F., Vennik, C. & Bögels, S. (2016).** Mindful parenting training in child psychiatric settings: heightened parental mindfulness reduces parents' and children's psychopathology. *Mindfulness*, 7(3), 680-689. <https://doi.org/10.1007/s12671-016-0504-1>
- Musa, R., & Shafiee, Z. (2007).** Depressive, anxiety and stress levels among mothers of ADHD children and their relationships to ADHD symptoms. *AJP*, 8, 20-28. Available at: <https://www.researchgate.net/publication/281856931>
- Potharst, E., Boekhorst, M., Cuijilts, I., Van Broekhoven, K., Jacobs, A., Spek, V., & Pop, V. (2019).** A randomized control trial evaluating an online mindful parenting training for mothers with elevated parental stress. *Frontiers in psychology*, 10. <http://doi.org/10.3389/fpsyg.2019.01550>
- Sroubek, A., Kelly, M., & Li, X. (2013).** Inattentiveness in attention-deficit/hyperactivity disorder. *Neuroscience bulletin*, 29(1), 103-110. <http://doi.org/10.1007/s12264-012-1295-6>
- Stewart-Yates, K. (2014).** Mindful caregivers' experiences of parenting young children (Doctoral dissertation, Kent State University). Retrieved from <https://etd.ohiolink.edu/>
- Tercelli, I., & Ferreira, N. (2019).** A systematic review of mindfulness based interventions for children and young people with ADHD and their parents. *Global Psychiatry*, 2(1), 79-95. <https://doi.org/10.2478/gp-2019-0007>
- University of Minnesota Extension. (2015).** Parents and stress: Understanding experiences, context, and responses. *Children's Mental Health*. Available at : <https://conservancy.umn.edu/bitstream/handle/11299/172384/parental-stress-2015.pdf?sequence=1&isAllowed=y>
- Van der Oord, S., Bogels, S., & Peijnenburg, D. (2012).** The effectiveness of mindfulness training for children with ADHD and mindful parenting for their parents. *Journal of child and family studies*, 21(1), 139-147. <http://doi.org/10.1007/s10826-011-9457-0>
- Wang, W. (2016).** Social support and parental stress among parents of young children with autism spectrum disorder: an international comparison of United States and China (Doctoral dissertation, University of Pittsburgh).