

The Effectiveness of a Training Program for Parents on Awareness of Alternative Treatments for Attention Deficit Hyperactivity Disorder

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Abstract

Objectives: This study aimed to design a training program to enhance parents' awareness of alternative treatments for attention deficit hyperactivity disorder (ADHD) and to verify its effectiveness.

Methods: A quasi-experimental approach was applied to a sample of 30 parents of children with ADHD. The study utilized two main tools: a scale measuring parents' awareness of ADHD treatment methods and a training program designed to increase awareness of alternative treatments for ADHD.

Results: The findings indicated statistically significant differences between pre- and post-measurements of parents' awareness levels. The training program effectively improved understanding of various ADHD-related interventions, including nutrition and herbal approaches, physical activities and fine arts, as well as behavioral and occupational therapies.

Conclusions: The study highlighted the importance of educational programs in increasing parental awareness of ADHD treatment alternatives, particularly given the growing interest in non-pharmacological interventions for children with ADHD.

Keywords: training program, alternative treatments, attention deficit hyperactivity disorder

فعالية برنامج تدريبي للآباء والأمهات حول التوعية بالعلاجات البديلة لاضطراب نقص الانتباه وفرط الحركة

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ملخص

الأهداف: هدفت الدراسة إلى تصميم برنامج تدريبي؛ لزيادة وعي أولياء الأمور بالعلاجات البديلة لاضطراب فرط الحركة ونقص الانتباه، والتحقق من فعاليته.

المنهجية: اعتمدت الباحثة المنهج شبه التجريبي، وطُبقت الدراسة على عينة عددها (30) من آباء لأطفال لديهم اضطراب فرط الحركة ونقص الانتباه. واستُخدمت في هذه الدراسة الأدوات التالية: مقياس لمستوى وعي أولياء الأمور بأساليب علاج اضطراب فرط الحركة ونقص الانتباه، وبرنامج تدريبي لزيادة وعي أولياء الأمور بالعلاجات البديلة لاضطراب فرط الحركة ونقص الانتباه.

النتائج: أشارت النتائج إلى أن الفروقات ذات الدلالة الإحصائية بين القياسين القبلي والبعدي في مستوى وعي أولياء الأمور باضطراب فرط الحركة ونقص الانتباه تشير إلى أن التدخل من خلال برنامج تدريبي، وورش عمل تعليمية، قد حسن بشكل فعال فهم أولياء الأمور لاضطراب فرط الحركة ونقص الانتباه في مجالات: (التغذية والأعشاب، والأنشطة البدنية والفنون الجميلة، والعلاج السلوكي والمهني لاضطراب فرط الحركة ونقص الانتباه).

الخلاصة: وخلصت الدراسة إلى أهمية البرامج التعليمية في زيادة الوعي ببدائل علاج اضطراب فرط الحركة ونقص الانتباه، وهو أمر بالغ الأهمية، لا سيما وأن العديد من أولياء الأمور غالباً ما يسعون إلى تدخلات غير دوائية لأطفالهم.

الكلمات الدالة: برنامج تدريبي، علاجات بديلة، اضطراب فرط الحركة ونقص الانتباه.



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Introduction

Attention-deficit/hyperactivity disorder (ADHD) is a clinical diagnosis in pediatrics and adults. It was initially thought to be a hyperkinetic reaction of childhood but is now recognized as a neurodevelopmental condition that results in significant educational, occupational, and social dysfunction (Posner, 2020). Attention-deficit/hyperactivity disorder (ADHD) is one of the most prevalent neurodevelopmental disorders among children and adolescents worldwide. It is a chronic condition characterized by persistent patterns of inattention, hyperactivity, and impulsivity that interfere with functioning or development (American Psychiatric Association [APA], 2013). Although ADHD is typically diagnosed in childhood, its symptoms often persist into adolescence and adulthood, affecting academic, social, and emotional domains (Biederman et al., 2006; Faraone et al., 2021). According to Faraone et al. (2021), approximately 60% of children with ADHD also suffer from comorbid psychiatric, behavioral, or developmental disorders, compounding the complexity of their condition.

The primary behavioral symptoms of ADHD are generally grouped into two categories: inattention (e.g., difficulty sustaining attention, forgetfulness, and disorganization) and hyperactivity–impulsivity (e.g., excessive fidgeting, difficulty remaining seated, and acting without thinking) (APA, 2013). These symptoms can severely impact children's ability to succeed academically and socially. Research shows that students with ADHD often struggle with following instructions, maintaining classroom behavior, and integrating with peers and teachers (DuPaul & Stoner, 2014). These difficulties are not reflective of a lack of intelligence but rather a result of neurological and executive-function deficits (Barkley, 2015).

ADHD symptoms include inattention, hyperactivity, and impulsivity, which lead to impaired performance in daily life, academic achievement, and relationships with peers and family. These children are also at risk for a range of problems as they grow into adolescents or adults. If the disorder continues into adolescence, it may lead to antisocial behavior known as *communication disorder* (Marquet-Doléac et al., 2024).

Moreover, ADHD has been associated with emotional-regulation problems, low self-esteem, and reduced quality of life (Wehmeier et al., 2010; Shaw et al., 2012). Children with ADHD may also exhibit poor academic performance, not due to cognitive deficits, but as a consequence of their inability to focus and adhere to classroom expectations (Arnold et al., 2020). While symptoms may diminish with age for some individuals, many continue to experience functional impairments into adulthood. With appropriate strategies, including behavioral therapy and environmental accommodations, individuals with ADHD can learn to manage their symptoms and improve their daily functioning (Chronis-Tuscano et al., 2015).

ADHD cannot be cured so that it stops completely, but treatment can help to control the symptoms and improve the child's functioning in everyday life, at home and at school. A treatment plan needs to be set by a specialist, and carrying out the treatment plan requires good communication and teamwork between doctors, parents, and school teachers. Psychotherapy can help children and their families cope better with everyday problems. Parents can help the child gain control over their behavior by establishing clear rules, lists of chores, and other structured routines (WHO, 2019).

The American Academy of Pediatrics (2002) emphasizes the importance of providing family-centered care and respecting families' diversity and choices. It was found that parents' choice of treatment was guided by different factors, including their knowledge of treatment options, treatment goals, any previous treatment experience, including side effects, and their beliefs regarding the cause of ADHD (Fiks et al., 2013). Treating patients with ADHD may require greater involvement of parents in the treatment process by identifying their beliefs and attitudes toward ADHD. In the Arab world, epidemiological studies on psychiatric disorders are uncommon (Fayyad, 2001).

Research Questions

1. Are there statistically significant differences between the pre- and post-measurements in parents' awareness of Attention Deficit Hyperactivity Disorder (ADHD)?
2. Are there statistically significant differences between the pre- and post-measurements in parents' awareness of nutrition and herbal remedies for managing ADHD?
3. Are there statistically significant differences between the pre- and post-measurements in parents' awareness of the role of physical activities and visual arts in managing ADHD?

4. Are there statistically significant differences between the pre- and post-measurements in parents' awareness of behavioral and functional treatments for ADHD?
5. Are there statistically significant differences between the pre- and post-measurements in parents' ability to apply and evaluate strategies for treating ADHD?

Objective Study:

1. To examine the effectiveness of the proposed training program in enhancing parents' awareness of Attention Deficit Hyperactivity Disorder (ADHD) before and after its implementation.
2. To assess the impact of the proposed training program on increasing parents' awareness of nutrition and herbal remedies in managing ADHD.
3. To evaluate the effectiveness of the proposed training program in raising parents' awareness of the role of physical activities and visual arts in addressing ADHD.
4. To investigate the extent to which the proposed training program improves parents' awareness of behavioral and functional treatments for ADHD.
5. To determine the effectiveness of the proposed training program in improving parents' ability to apply and evaluate strategies for managing ADHD.

Importance and Significance of the Study

ADHD is one of the most common neurodevelopmental disorders and significantly affects children's academic, social, and emotional development (APA, 2013; Faraone et al., 2021). While pharmacological treatments remain the frontline intervention, they are often associated with side effects and do not fully meet the needs of all children (Coghill et al., 2023; Lee et al., 2022). This highlights the importance of exploring complementary and alternative approaches, such as nutrition, herbal remedies, physical activity, fine arts, and behavioral therapies. Parents play a central role in managing ADHD, and their level of awareness directly influences treatment choices and the consistency of care (Fabiano et al., 2009; Fiks et al., 2013). Therefore, enhancing parental knowledge and skills through structured training programs is crucial for improving child outcomes.

The significance of this study lies in its unique contribution to addressing a gap in ADHD research and practice. While much of the literature has focused on clinical interventions, fewer studies have emphasized parental awareness of alternative treatments. This study demonstrates that a structured training program can significantly improve parents' understanding and ability to apply evidence-based strategies beyond medication. The findings are consistent with earlier research showing the benefits of exercise (Hoza et al., 2015; Cerrillo-Urbina et al., 2015), diet modifications (Lukito et al., 2020; Pelsser et al., 2011), and behavioral interventions (Fabiano et al., 2009) in managing ADHD symptoms. Moreover, by equipping parents with practical skills to evaluate and apply interventions, this study empowers families to adopt a holistic and sustainable approach to ADHD management.

Beyond its academic contribution, the study has important policy and practical implications. The findings can inform educational and health authorities, such as the CDC, which emphasize parental education and school support as part of ADHD management strategies (Zablotsky & Black, 2020). By providing a replicable training model, the study contributes to reducing reliance on medication alone and promoting child-centered, family-supported interventions. In the long term, improving parental awareness and competence may enhance children's quality of life, reduce social and educational difficulties, and support their successful integration into school and society (Shaw et al., 2012; Wehmeier et al., 2010).

LITERATURE REVIEW

Definition of ADHD

Attention Deficit Hyperactivity Disorder is usually referred to as a "behavioral problem." ADHD is a chronic and debilitating disorder that is accompanied by many cognitive, social, emotional, and behavioral problems (Harpin, 2005).

Individuals with ADHD exhibit hyperactivity and impulsive behavior, and they cannot focus on tasks for more than a few minutes (Ben Abbas, 2023). Moreover, ADHD is a neurodevelopmental condition associated with structural and functional differences in the brain, particularly in areas related to attention regulation, impulse control, and executive functioning. These neurological differences make it difficult for individuals with ADHD to sustain attention, regulate behavior, and control impulsivity, which significantly affects their daily life and social functioning (Barkley, 2015; Cortese et al., 2012).

ADHD Prevalence

ADHD is typically diagnosed around the age of seven, although more severe cases can be identified earlier (Visser et al., 2014). In the United States, the prevalence of ADHD diagnoses among children aged 3 to 17 has significantly increased over the past two decades. Zablotzky et al. (2019) reported a rise in ADHD prevalence from 6–8% in 2000 to approximately 9–10% in 2018, indicating that over 5 million children had been diagnosed. This upward trend may be attributed to increased awareness, improved diagnostic tools, and broader diagnostic criteria (Hinshaw & Scheffler, 2014).

Sociodemographic factors also influence the distribution of ADHD. Research indicates that ADHD is more commonly diagnosed in boys than in girls, potentially due to differing symptom presentations, where boys often exhibit more externalizing behaviors (Gershon, 2002). Additionally, children from low-income families or rural areas are more likely to be diagnosed with ADHD compared to their peers from higher-income or urban settings (Zablotzky & Black, 2020). Cultural perceptions, access to health services, and parental education levels may also contribute to diagnostic disparities across different populations (Bailey et al., 2019).

ADHD Treatment

Pharmacological treatment, particularly with stimulant medications such as methylphenidate and amphetamines, has long been the frontline intervention for ADHD. These medications have been shown to be effective in reducing core symptoms and improving executive function (Coghill et al., 2023; Banaschewski et al., 2018). However, despite their efficacy, these medications are not without drawbacks. Side effects such as appetite suppression, sleep disturbances, and potential cardiovascular concerns have been reported, leading some parents and caregivers to seek alternative approaches (Lee et al., 2022).

Furthermore, not all children respond optimally to pharmacological treatment, especially those with co-occurring medical or psychiatric conditions. Consequently, researchers and clinicians have increasingly turned their attention to non-pharmacological and complementary therapies. The term “alternative treatments for ADHD” refers to non-mainstream approaches that are used instead of, or alongside, standard medical treatments (such as dietary changes, nutritional supplements, mindfulness meditation, yoga and physical exercise, neurofeedback, cognitive training programs, herbal remedies, and acupuncture or chiropractic care) to manage symptoms of Attention-Deficit/Hyperactivity Disorder (ADHD). These treatments often fall outside of conventional medicine (Leon et al., 2024). Alternative treatments have shown promise in improving attention, reducing hyperactivity, and supporting emotional regulation (Cortese et al., 2020; Sonuga-Barke et al., 2013).

Physical activity, for example, has been found to enhance executive functioning and increase dopamine levels in the brain, which are typically deficient in individuals with ADHD (Mah et al., 2021). Studies by Pontifex et al. (2013) and Cerrillo-Urbina et al. (2015) highlight the cognitive benefits of aerobic exercise in children with ADHD. Similarly, nutritional interventions, such as omega-3 fatty acid supplementation and elimination diets, have been linked to behavioral improvements, though evidence remains mixed (Lukito et al., 2020; Pelsser et al., 2011).

Cognitive-behavioral strategies and mindfulness training have also gained attention for their ability to improve self-regulation and attention control (Evans et al., 2018; Mitchell, 2011). Moreover, digital tools such as computer-based cognitive training and serious games are increasingly used to enhance executive functioning and working memory in children with ADHD (Pievsky & McGrath, 2018; Prins et al., 2013).

Despite growing interest in these alternatives, there remains a gap in parents’ awareness and knowledge of non-

pharmacological interventions. As primary caregivers, parents play a vital role in identifying symptoms, seeking treatment, and reinforcing strategies at home. Enhancing parental awareness and engagement in a variety of ADHD management strategies, including behavioral, nutritional, physical, and artistic approaches, is therefore critical to improving outcomes for children with ADHD (Fabiano et al., 2009; Healey et al., 2015).

Causes of Attention Deficit Hyperactivity Disorder:

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder. Genetic and environmental factors contribute to its development. According to Thapar, Cooper, Jeffries, and Stergiakouli (2012), the cause of ADHD is largely genetically linked. They also stated that environmental factors play a role in its occurrence. In addition, Nariman Muhammad's (2021) study indicated that one of the factors that leads to ADHD is heredity, especially if one of the parents suffers from ADHD. Furthermore, some causes may lead to attention deficit hyperactivity disorder; these causes may include injuries the fetus is exposed to during birth, such as difficult labor and lack of oxygen (Al-Otaibi & Al-Rababa, 2020). Moreover, Ahmed (2018) indicated that food quality influences the severity of ADHD in children. Malnutrition, eating foods with preservatives, coloring materials, or artificial flavors, and consuming sugars and fast food are among the most important factors that lead to ADHD.

Family factors also play a role in increasing the severity of the symptoms of this disorder, such as the parents' inability to control and guide the child's behavior. Psychological factors can play a role as well, especially if the child is exposed to constant frustrations, psychological pressure, psychological, physical, or emotional abuse, and deprivation of love and affection (Abu Al-Ata & Eid, 2020).

Alternative Treatments for Attention Deficit Hyperactivity Disorder

Caring for a child with ADHD is one of the most challenging tasks for parents. It can lead to significant psychological stress for both the parents and other family members, and may negatively impact their job performance and social activities (Al-Maamari & Al-Shorbaji, 2018). Fortunately, there are alternative treatments that help reduce the severity of ADHD symptoms. These treatments can be used by parents on an ongoing basis with their children. Using alternative treatments on a regular basis can limit the development of ADHD symptoms during childhood.

Moreover, alternative treatments can help individuals with ADHD improve social interactions, enhance self-control, manage stress more effectively, develop self-regulation skills, and increase concentration. Common alternative approaches include exercise, dietary changes, and exposure to natural environments. Exercise has been found to enhance attention and improve mood in individuals with ADHD by increasing the levels of dopamine, serotonin, and norepinephrine in the brain, which are neurotransmitters associated with focus and emotional regulation (Hoza et al., 2015; Wigal et al., 2003). Dietary changes are also important, as many children with ADHD have food sensitivities or allergies. Eliminating refined sugar, artificial food dyes, and processed foods has been shown to reduce behavioral issues and may help lessen the severity of ADHD symptoms (Niederhofer, 2011; Nigg et al., 2012). Additionally, individuals with ADHD often struggle to sustain attention. Spending time outdoors, especially in green environments, has been shown to engage "involuntary attention," allowing the brain to rest and recharge, which can improve focus and reduce hyperactivity (Taylor & Kuo, 2009).

Statistical methods:

IBM SPSS Statistics version 26 was used to calculate a t-test to compare the means of two related samples, namely between the pretest and the posttest for the experimental group.

Methods

Research design:

The study employed a single-group, quasi-experimental design to achieve the study objective. The phases of this study included a pre-workshop assessment, workshop presentations, and a post-workshop assessment. This design was used to compare the level of awareness of the parents participating in the study about alternative treatments for attention deficit hyperactivity disorder and to measure the degree of change that occurs as a result of the interventions.

Participants:

Thirty parents of children with attention deficit hyperactivity disorder participated in the research: 9 males (30%) and 21 females (70%). The number of participants aged 20 to less than 30 years was 4 (13.33%); those aged 30 to less than 40 years numbered 19 (63.34%); and those aged over 40 years numbered 7 (23.33%). Regarding marital status, 24 participants were married (80%) and 6 were divorced (20%). As for educational qualification, 2 participants (6.67%) held a master's degree, 22 (73.33%) held a bachelor's degree, and 6 (20%) held a diploma. Table 1 shows the specifications of the sample.

Table (1): Characteristics of parents of children with attention deficit hyperactivity disorder (n=30)

Gender	N	%
Male	9	30
Female	21	70
Age	N	%
20 to 30 years	4	13.33
30 to 40 years	19	63.34
More than 40 years	7	23.33
Educational qualification	N	%
Diploma	6	20
Bachelor's	22	73.33
Master's	2	6.67
Marital status	N	%
Married	24	80
Divorced	6	20

Study Tools**1-The training program**

The training program was designed as a structured intervention to enhance parents' awareness of alternative treatments for ADHD and to provide them with practical skills to support their children. It was delivered through a series of workshops and interactive sessions that combined lectures, group discussions, and practical activities. The content of the program was organized into five main modules. The first module, *Basic Knowledge of ADHD*, covered the definition, subtypes, symptoms, and diagnostic criteria of the disorder. The second module, *Nutrition and Herbal Remedies*, presented evidence-based information about dietary modifications, such as elimination diets and omega-3 fatty acids, as well as the safe use of herbal supplements in reducing ADHD symptoms. The third module, *Physical Activities and Fine Arts*, emphasized the role of sports, physical exercise, and creative arts in enhancing attention, emotional regulation, and self-control.

The fourth module, *Behavioral and Occupational Therapy*, introduced parents to behavior management techniques, reinforcement strategies, and occupational therapy approaches aimed at strengthening adaptive skills. The fifth and final module, *Application and Evaluation of Strategies*, provided parents with opportunities to practice interventions, analyze case scenarios, and discuss methods for monitoring the effectiveness of strategies at home. Each module combined theoretical instruction with practical demonstrations. Parents were encouraged to reflect on their experiences, share challenges, and develop action plans to implement strategies with their children. This blended design ensured that knowledge acquisition was paired with skill development.

2- A questionnaire

A structured questionnaire was developed by the researcher after an in-depth review of relevant literature on Attention Deficit Hyperactivity Disorder (ADHD) and its alternative treatments. The purpose of the instrument was to assess parental knowledge before and after a training intervention, as well as to collect basic demographic data. The questionnaire

consisted of two main sections:

Section One: Parent Characteristics:

This section was designed to collect demographic information, including the parent's age, sex, educational qualification, and marital status.

Section Two: Parental Knowledge of Alternative Treatments for ADHD (Pre- and Post-Test):

This section was designed to assess parents' knowledge related to alternative approaches to managing ADHD. It included a total of five parts, each focusing on a specific domain:

Part A: Five multiple-choice questions covering the fundamental concepts of ADHD, including its definition, types, symptoms, diagnostic criteria, and methods of diagnosis.

Part B: Nine multiple-choice questions related to nutrition and herbal remedies, including the impact of diet, food sensitivities, and the role of natural supplements.

Part C: Ten multiple-choice questions on the role of physical activities and fine arts in supporting children with ADHD.

Part D: Eleven multiple-choice questions focused on behavioral and occupational therapy, including techniques to support self-regulation and adaptive behavior.

Part E: Eleven multiple-choice questions addressing the practical application and evaluation of alternative treatments in daily life.

Each question was designed in a multiple-choice format to facilitate objective scoring.

Validity of the Instrument: To ensure the validity of the questionnaire, several steps were taken during its development:

1. Content Validity:

The questionnaire was developed after a thorough review of current literature, guidelines, and evidence-based practices related to Attention Deficit Hyperactivity Disorder (ADHD) and alternative treatments. This process helped ensure that all relevant dimensions of the topic were covered. To further validate the content, the questionnaire was submitted to a panel of subject matter experts, including specialists in child psychology, psychiatry, special education, and nursing. They reviewed the items for clarity, relevance, completeness, and appropriateness. Based on their feedback, revisions were made to enhance the accuracy and representation of each item.

2. Face Validity:

The instrument was also reviewed to assess face validity, ensuring that the questionnaire appeared to measure what it was intended to measure from the perspective of non-expert reviewers (e.g., parents or general educators). This helped confirm that the language was clear and understandable for the target population.

3. Pilot Testing:

A pilot study was conducted with a small sample of parents (e.g., 8–10 participants) who were similar to the target population. The pilot test helped evaluate the clarity, readability, and time required to complete the questionnaire. Feedback from this process led to minor modifications to wording and structure, further strengthening the instrument's validity.

Reliability of the Instrument:**Table 2: The reliability of the scale was computed using Cronbach's Alpha coefficient.**

Dimensions	No. of items	CronbCronbach's alpha
Dim_1 attention deficit hyperactivity disorder	5	0.749 0.749
Dim_2 Nutrition and herbs	9	0.790 0.790
Dim_3 Physical activities and fine arts	10	0.925 0.925
Dim_4 Behavioral and occupational therapy	11	0.978 0.978
Dim_5 Application and evaluation	11	0.925 0.925

From the table above, we observe that the reliability coefficients of the dimensions of the scale are acceptable, as they ranged from 0.749 to 0.978.

Ethical considerations:

The researcher obtained ethical approval to conduct the study from the Local Committee for Research Ethics at Jazan University. All parents who agreed to participate were informed about the study's aim and their rights, according to research ethics, to choose whether or not to participate. They then gave their consent to participate in the study.

Results according to each research question:

A paired samples t-test was performed to evaluate whether there was a difference in the Parental Awareness of Alternative Treatments for ADHD in the experimental group before and after they received the treatment.

Table 3. shows a comparison between the pre- and post-tests for the experimental group

	Pretest		P posttest		t	df	Sig. (2tailed)
	Mean	SD	MEAN	SD			
Dim_1 attention deficit hyperactivity disorder	14.83	2.036	20.37	3.810	7.912	29	.000
Dim_2 Nutrition and herbs	19.40	4.959	38.60	5.049	15.738	29	.000
Dim_3 Physical activities and fine arts	20.90	5.892	42.40	5.829	15.365	29	.000
Dim_4 Behavioral and occupational therapy	22.67	6.718	45.97	6.457	13.436	29	.000
Dim_5 Application and evaluation	28.33	7.155	47.00	6.523	9.972	29	.000
Total Total	106.13	21.725	194.33	23.411	14.482	29	.000

Source: From the SPSS outputs prepared by the researcher

Research Question 1: Are there statistically significant differences between the pre- and post-measurements in parents' awareness of ADHD?

The results show that there are statistically significant differences between the pre- and post-measurements in parents' awareness of ADHD. Parents' awareness of ADHD improved significantly after the training program.

Pre-test Mean: 14.83 (SD = 2.036)

Post-test Mean: 20.37 (SD = 3.810)

$t(29) = 7.912, p < .001$.

This means the program successfully increased parents' understanding of ADHD symptoms, types, and diagnostic criteria.

Research Question 2: Are there statistically significant differences between the pre- and post-measurements in parents' awareness of nutrition and herbal remedies for managing ADHD?

The results show that there are statistically significant differences between the pre- and post-measurements in parents' awareness of nutrition and herbal remedies for managing ADHD. Parents' awareness of nutrition and herbal remedies improved greatly.

Pre-test Mean: 19.40 (SD = 4.959)

Post-test Mean: 38.60 (SD = 5.049)

$t(29) = 15.738, p < .001$.

The program effectively taught parents how dietary factors and herbal supplements can influence ADHD symptoms.

Research Question 3: Are there statistically significant differences between the pre- and post-measurements in parents' awareness of the role of physical activities and visual arts in managing ADHD?

The results show that there are statistically significant differences between the pre- and post-measurements in parents' awareness of the role of physical activities and visual arts in managing ADHD. Parents' awareness improved significantly.

Pre-test Mean: 20.90 (SD = 5.892)

Post-test Mean: 42.40 (SD = 5.829)

$t(29) = 15.365, p < .001$.

The program raised parents' knowledge about the benefits of sports, exercise, and fine arts for improving focus and reducing hyperactivity.

Research Question 4: Are there statistically significant differences between the pre- and post-measurements in parents' awareness of behavioral and functional treatments for ADHD?

The results show that there are statistically significant differences between the pre- and post-measurements in parents' awareness of behavioral and functional treatments for ADHD. Parents' knowledge improved significantly.

Pre-test Mean: 22.67 (SD = 6.718)

Post-test Mean: 45.97 (SD = 6.457)

$t(29) = 13.436, p < .001$.

This shows that parents gained a better understanding of behavioral therapy, occupational therapy, and practical strategies to support children with ADHD.

Research Question 5: Are there statistically significant differences between the pre- and post-measurements in parents' ability to apply and evaluate strategies for treating ADHD?

The results show that there are statistically significant differences between the pre- and post-measurements in parents' ability to apply and evaluate strategies for treating ADHD. Parents' ability to apply and evaluate strategies improved.

Pre-test Mean: 28.33 (SD = 7.155)

Post-test Mean: 47.00 (SD = 6.523)

$t(29) = 9.972, p < .001$.

This suggests that beyond knowledge, the training program improved parents' practical application skills, helping them use and assess treatment strategies in daily life.

Overall Result: Across all five domains, parents' total awareness scores improved:

Pre-test Total Mean: 106.13 (SD = 21.725)

Post-test Total Mean: 194.33 (SD = 23.411)

$t(29) = 14.482, p < .001$.

This confirms that the training program was highly effective in increasing parents' awareness and application of alternative treatments for ADHD.

Discussion:

The purpose of this study was to examine the effectiveness of a training program in enhancing parents' awareness of alternative treatments for Attention Deficit Hyperactivity Disorder (ADHD). The findings confirmed that the program was highly effective in improving knowledge and practical skills across all domains addressed in the research questions.

First, the statistically significant differences between the pre- and post-measurements in the level of parents' awareness of ADHD suggest that the intervention, which is the training program, effectively improved parents' understanding of ADHD. This result aligns with findings in previous research, where educational programs or workshops aimed at increasing parental awareness have led to improved knowledge about ADHD. Alrahili et al. (2022) emphasized the importance of advice from expert physicians in determining perceptions and attitudes toward the symptoms, etiology, prognosis, and treatment of ADHD. This result is consistent with the findings of Dixon et al. (2023), who emphasized that structured parental education programs can enhance treatment acceptance and understanding of ADHD. The increase in

scores suggests that parents gained a deeper understanding of the nature of the disorder, its symptoms, and its diagnostic features. Such awareness is crucial, as parents serve as the first line of support for children with ADHD, influencing treatment-seeking behavior and home management strategies.

Second, the significant improvement in parents' knowledge about nutrition and herbs after receiving the training program ($M = 38.60$, $SD = 5.049$) compared to before ($M = 19.40$, $SD = 4.959$), with a t -value of 15.738 and a p -value of less than 0.001, strongly supports the second hypothesis. The study demonstrated a substantial improvement in awareness of nutrition and herbal remedies as complementary approaches to ADHD management. This aligns with previous research indicating that dietary modifications, such as omega-3 supplementation and elimination diets, may reduce symptom severity (Lukito et al., 2020; Pelsser et al., 2011). By enhancing parents' understanding of the role of nutrition and herbs, the program empowered them to make informed decisions about safe and effective non-pharmacological interventions. This result validates the importance of programs in improving health literacy. Parents are in a unique position to influence their children's dietary habits and health behaviors, and by increasing their understanding of nutrition and herbs, they are likely to make better choices for their families.

Third, the results show a significant increase in parents' knowledge about physical activities and fine arts in the experimental group after receiving the program ($M = 42.40$, $SD = 5.829$) compared to before the program ($M = 20.90$, $SD = 5.892$), with a t -value of 15.365 and a p -value of less than 0.001. This indicates a statistically significant improvement, validating the third hypothesis. This result highlights the value of educating parents about the role of physical activity and fine arts in child development. These areas are often overlooked in traditional educational settings, yet they are essential for promoting overall well-being, creativity, and cognitive development in children. By improving parents' knowledge, the program may have empowered them to incorporate these activities into their children's routines, fostering a more holistic approach to development. The results of this study are consistent with the findings of other studies. For instance, a study by Dixon et al. (2023) found that parents who participated in a single-session workshop experienced significant knowledge and belief changes regarding medication efficacy, willingness to accept physician treatment recommendations, and rejection of non-empirically based treatments. Follow-up data showed that 41% of contacted participants met with physicians to discuss medication utilization and behavioral treatments. Brief, one-session psycho-educational workshops were feasible and impacted parental beliefs and behaviors regarding scientifically supported interventions for ADHD. This result supports earlier studies by Hoza et al. (2015) and Cerrillo-Urbina et al. (2015), which highlighted the positive impact of exercise on attention and behavior regulation. Similarly, exposure to fine arts and creative activities can provide children with opportunities for self-expression, improved focus, and stress reduction. The integration of these elements into parental knowledge expands the range of supportive interventions available at home.

Fourth, the results demonstrate a significant increase in parents' knowledge about behavioral and occupational therapy for ADHD after participating in the educational program. The post-program mean score ($M = 45.97$, $SD = 6.457$) was considerably higher than the pre-program mean ($M = 22.67$, $SD = 6.718$), with a t -value of 13.436 and a p -value of less than 0.001. This statistically significant improvement validates the fourth hypothesis and underscores the effectiveness of the intervention in enhancing parental understanding of these therapeutic approaches for children with ADHD. The substantial increase in knowledge suggests that the program successfully provided parents with crucial insights into how behavioral and occupational therapy can be utilized to support children with ADHD. These therapies play a key role in helping children develop self-regulation skills, improve attention and social interactions, and enhance daily functioning through structured interventions. The large effect size indicated by the high t -value further confirms the strong impact of the program. This echoes the findings of Fabiano et al. (2009), who demonstrated the effectiveness of behavioral therapy in reducing ADHD symptoms, as well as Chronis-Tuscano et al. (2015), who emphasized the importance of parental adherence to behavioral interventions. By equipping parents with knowledge of behavioral and functional strategies, the program ensures better continuity of care between clinical and home settings.

Finally, the study revealed a significant improvement in parents' ability to apply and evaluate strategies for managing ADHD. This suggests that the program not only improved theoretical knowledge but also translated into practical skills.

This outcome is critical, as the effectiveness of any intervention depends on consistent and correct application by caregivers (Fiks et al., 2013). Parents' improved ability to evaluate strategies also reflects an enhanced sense of confidence and autonomy in managing their children's condition.

Overall, the results show a significant increase in the total score of parental awareness of alternative treatments for ADHD in the experimental group after they received the program ($M = 194.33$, $SD = 23.411$) compared to before the program ($M = 106.13$, $SD = 21.725$). With a t -value of 14.482 and a p -value of less than 0.001, the difference is statistically significant and supports the validity of the sixth hypothesis. These results provide strong evidence for the effectiveness of structured programs in enhancing parents' awareness and competence in dealing with ADHD. These findings are in line with international consensus statements (Faraone et al., 2021), which highlight the need for multi-modal management approaches, including parental education, behavioral strategies, and complementary treatments. Given the limitations of pharmacological therapy, such as side effects and variable responses, this study underscores the value of empowering parents with knowledge about safe and evidence-based alternatives. This substantial improvement in parental awareness suggests that the program was highly effective in enhancing parents' understanding of alternative treatments for ADHD. The difference in means indicates that parents not only gained knowledge but likely also developed a more comprehensive understanding of the various alternative treatment options available for managing ADHD. The large effect size (indicated by the high t -value and small p -value) suggests that the intervention had a strong impact on parental awareness.

The significant increase in scores is attributed to several factors, such as the thoroughness of the content, the clarity with which alternative treatments were explained, and the engagement level of the program. If the program involved practical, evidence-based alternatives and helped parents understand the benefits and limitations of each approach, this could have further reinforced their learning.

Conclusion:

The present study underscores the effectiveness of programs in enhancing parental awareness of alternative treatments for children with Attention-Deficit/Hyperactivity Disorder (ADHD). The statistically significant improvements observed across various domains: nutrition, physical activities, behavioral and occupational therapies, affirm the critical role of targeted educational interventions. By equipping parents with comprehensive, evidence-based knowledge, these programs empower them to make informed decisions, engage more effectively in their child's therapeutic process, and seek appropriate multidisciplinary support. Given the limited epidemiological research on ADHD in the Arab world, these findings highlight the urgent need for broader, culturally sensitive educational initiatives. Enhancing parental literacy regarding ADHD treatments is essential to improving clinical outcomes and fostering a supportive environment for affected children.

Recommendation

For future studies, it would be valuable to assess whether the increase in awareness results in changes in behavior or treatment choices for the children, as well as whether the knowledge gained is retained over time. Additionally, further exploration into which aspects of the educational program were most effective (e.g., group discussions, case studies, hands-on learning) could provide insights into optimizing future educational interventions for parents of children with ADHD.

Future studies should investigate the actual experiences and attitudes of parents related to ADHD, incorporating both qualitative and quantitative approaches. Interventions should be designed to target parents of children at high risk of ADHD. It is important for such interventions to address the alternative treatments for ADHD.

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