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Empowerment and Quality of Life of Mothers who have Primary School Children with Attention Deficit Hyperactivity Disorder

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Abstract
Background: Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder marked by problems paying attention, excessive activity, and impulsivity. In addition, empowerment is a metric that used to improve autonomy and self-determination through participation and support. As a result, mothers' engagement and education level was a crucial factor in ensuring that children with ADHD have a high quality of life. **Aim** was to empower and maintain quality of life of mothers who have primary school children with attention deficit hyperactivity disorder. **Research design: A** quasi-experimental research was used in this study**. Setting:** The study was carried out in El Shaheed and Al Fath primary schools at Minia City**. Sample:** A purposive sample included 50 mothers of children with ADHD. **Tools of data collection:** Three instruments were utilized to gather data: an interview questionnaire sheet, an empowerment scale, and the third: World Health Organization Quality of Life-Brief (WHOQOL-BREF). **Results:** The current study revealed a considerable increase in mothers' empowerment and a high quality of life in the post-test period. **Conclusion:** There was a significant improvement in mothers' awareness of ADHD after the training was implemented. In the pretest, mothers' empowerment was low, but it improved in the post-test, with a statistically significant difference. The quality of mothers' life in the pre-test was low and in the post-test became high. **Recommendations:** Future researches are required to develop and refine interventions through applying social empowerment and maintain quality of life.

Keywords: Attention Deficit Hyperactivity Disorder, Empowerment, Mothers, Primary School Children & Quality of Life.

Introduction

Because attention deficit hyperactivity disorder is a brain disease that controls the information the mind gets and the mind can only process the information it receives, it is reasonable to expect that it will have an impact on one's sense of self and others **(Merriam-Webster, 2021).** Attention deficit hyperactivity disorder (ADHD) causes serious problems for sufferers and those around them, as they struggle with a variety of school-related issues such as paying attention, follow directions, stay seated, complete listen, and write assignments, have poor relationships. Furthermore, these issues are frequently accompanied by other issues such as low self-esteem which may have an impact on these students' academic performance, as well as a social issue such as anti-social behaviour, difficulty getting along with others, and so on are often less liked by their peers **(Halpern & Healey, 2016).**

Between the ages of 2 and 17, around 9.4 percent of children in the United States were diagnosed with ADHD, according to estimates of **(Centers for Disease Control and Prevention, 2018)**. Attention deficit hyperactivity disorder (ADHD) affects 8-12 percent of elementary school students globally, and 7.48 percent in (Egypt) depending on the diagnostic criteria and assessment tool, the incidence of attention deficit hyperactivity disorder is varies **(Vidbeck, 2014).**

When a child with ADHD starts school, he or she is likely to feel increasing difficulty. These children have issues with behavioural control (inattention, hyperactivity, and impulsivity (acting before thinking), academic performance, and interpersonal connections, which can lead to negative attention from parents, teachers, and peers, as well as a poor quality of life **(Dvorsky & Langberg, 2016).** Continuous negative feedback from important persons in children's lives can destroy their sense of self, leading to the development of negative coping techniques, a lack of competence, and a low quality of life causing major challenges in relationships and work, preventing these people from reaching their long-term goals (**CHADD, 2018).**

Amartya Sen's idea of institution, which describes a person's capacity to act in support of things they value, and have reason to value, is the first component of empowerment. The second aspect of empowerment is associated with organizational environment, which enables people to exercise institution efficiently. Empowerment is defined as an individual's or a group's capacity and ability to make

the best decisions and take the appropriate actions; it involves inspiring possibilities and then transforming them into required activities and outputs **(Sabina & Solava, 2007).** Just a generated element, empowerment could support strengthening individual autonomy and self-determination. This promotes individual's willingness to exercise its internal power, and their responsibility to carry out their own activities as well as issues, allowing them to function independently also with autonomy **(Adams, 2008)**. When people are able to deal with their lack of power, sense of vulnerability, and helplessness as well as recognise and take advantage of their own resources and opportunities, it can either be supported by specialized skill actions and experiences or can be established the individuals **(Capacity Building Center for States. 2016).**

Furthermore, empowerment has 3 parts. **One** "an interactional aspect," that also refers to how individuals interact with their social situation; **another one** is "a behavioural aspect," that also refers to an individual's ability to practice environmental control; and **the third** is "an intrapersonal aspect," which refers to an individual's sense of self-worth and interpreted ability. Studies on maternal empowerment have identified both of these components, and also their connections to the standard of child care provided through empowered moms, this methods can help mothers in keeping a handle on their children' comfort while also preserving their inner independence **(Ebrahimi, et al., 2013).**

The World Health Organization (WHO) defines quality of life (QOL) as an assessment of an individual's view of their place in life in relation to their concerns, standards, objectives, and expectations in the context of the culture and value systems in which they live **(The World Health Organization Quality of Life, 1995**). In medical practice, assessing QOL is vital to strengthen the doctor–patient interaction and evaluate the effectiveness and relative merits of various therapies, as well as in health care assessment, research, and policy-making **(World Health Organization; 1998).** When compared to parents of healthy children, parents of children with ADHD report lower levels of QOL **(Xiang, et al., 2009).**

The responsibility of pediatric nurse is always to provide basic information about the illness to family members and affected children, as well as information on how to manage it. This includes assisting them in recognizing the causes of their problems and then motivating them to change their behaviours, as well as upgrading their lifestyle attitudes so that the disease does not worsen **(Joshua, et al., 2014)**. The nurse should evaluate the impact of the child's mental health issue on the child's social functioning, education, and family life on a global level. The assessment considers the danger of injury to oneself or others, as well as the possibility of abuse or neglect. It is also a good idea to find out if there's a family history of mental illness. Finally, nurses assist families comprehending and dealing with the inevitable uncertainty **(Wolraich, et al., 2018).**

Significance of the study:

Inattention, hyperactivity, and impulsivity are symptoms of ADHD in children, who show a lack of control and feel powerless in their ability to adjust. Interventions focus on behaviour control through the use of stimulant drugs and behavioural modification approaches such as reward and punishment **(Barkley, 2017).** Because it is linked to morbidity and disability in children, ADHD is considered a public health issue. It has a number of negative repercussions for them, including financial costs, parental stress, and a detrimental impact on academic and vocational activity. Symptomatic behaviours resurface when these drugs are no longer available or are discontinued.

ADHD is a common disorder that affects 6.7 to 7.8% of children worldwide, according to epidemiological research **(Thomas et al., 2015).** This rate is greater in Arab countries, with 9.4–21.8 percent in Egypt **(EL-Gendy et al., 2017 & Bishry et al., 2018**) and 11.6 percent in Saudi Arabia **(Homidi et al., 2013).** Up to 30–50 percent of children with ADHD have comorbid conduct disorder, while about 35 percent of children with ADHD have oppositional defiant disorder **(Harty et al., 2009).**

As a result, offering information about ADHD can improve and encourage child and family health outcomes by increasing their understanding of the causes of their difficulties, motivate them to modify behaviours, generate a sense of empowerment, and improve their adaptability. Also, encourage healthy, positive conduct. Mothers can also be empowered by engaging in activities and receiving education. Mothers can be assisted in maintaining control over their children's well-being by taking this method. Educational programs are critical/ decisive in supporting moms and their children to deal with illness through expanding their knowledge then assisting moms in understanding the options available to them. As a result, planning and implementing an educational program for mothers of primary school children with ADHD is necessary.

Aim of the Study: was to empower and maintain quality of life of mothers who have primary school children with attention deficit hyperactivity disorder.

Research Hypothesis:

H1: Mothers who have primary school children may have enough knowledge regarding attention deficit hyperactivity disorder after application of the program.

H2: Mothers who have primary school children may maintain high empowerment and high quality of life regarding attention deficit hyperactivity disorder after application of the program.

Subjects and Methods

Research design: To achieve the study goal, a quasi-experimental (pre-test / post-test) research design was used .

Setting: This study was carried out in El Shaheed and Al Fath Primary Schools at Minia City.

Sampling and population: A purposeful sampling technique was used, 50 mothers were included in the study. They selected according to the following inclusion criteria, mothers have primary school-aged children with ADHD, and Mothers who agreed to take part in the study.

Tools for Data Collection:

In this study, three tools were used which are listed below :

Tool I: An interview questionnaire sheet for mothers of primary school children with ADHD was developed by the researchers based on appropriate literatures **(The Johns Hopkins Health System, 2022),** in order to gather data required for this study, as pre/post program tests, to assess the knowledge of mothers about ADHD. It was included of the two parts:

1. **Part one:** personal information, as children's ages, their gender, mothers' age, and educational level, occupation the number of children they have, residence, and consanguinity among parents.
2. **Part two:** Questionnaire sheets, to assess mothers' knowledge in the pre-and post-education tests. It included questions related to definition, signs and symptoms, types, causes, diagnosis, treatment, managing symptoms of ADHD.

Scoring system of mothers' knowledge: Correct answers received just one-point grade, while incorrect answers received a zero. The mean and standard deviations of these scores were calculated after they were transformed to a percent score. A score of less than 50 percent on the overall mother's knowledge was regarded as unsatisfactory, but a score of 50 percent or above was considered satisfactory.

Tool II: The Family Empowerment Scale. **Koren, et al., (1992)** developed the scale, which was later amended by the Behavioral and Developmental Services and the Center for Research and Training **Family Support and Children's Mental Health (2010).** It included 17 components divided into three create sections: family six statements, child service system six statements, and community five statements; it was evaluated using a 5 point Likert scale as Never (1), Seldom (2) and Sometimes (3) Often (4) Very often (5). The scale was chosen by the researchers, and translated it into Arabic language. Higher score denotes comparatively greater empowerment in each category. **The following results of the family empowerment scale:** (17-39) low empowerment, (40-62) moderate empowerment, and (63-85) high empowerment

Tool III: World Health Organization Quality of Life-Brief (1995) (WHOQOL-BREF) an Arabic translation. There were 26 items, with 24 of them covering four different QOL domains: physical health (seven items), psychological health (six items), social interactions (three items), and environment (eight items). Two additional items assessed overall quality of life and general health (12). In Questions three, four, and twenty six, three negatively phrased items were graded on a five-point Likert scale (low score of one to high score of five). The mean of each domain score was calculated using SPSS version 20. High scores indicated high QOL.

Validity and Reliability:

The tools were subjected to a content validity test by a panel of three pediatric nursing specialists, and required revisions were made. The Cronbach's alpha 0.880 coefficient approach was used to test the tools' consistency and reliability.

Pilot study:

A pilot study was conducted on 10 percent (5) mothers it was undertaken to assess the study tools' clarity and completeness, as well as the time required to complete each instrument. The necessary modifications, exclusions, and/or additions were made based on the findings of the pilot. Before beginning the study, the final forms were approved by a jury.

Ethical consideration:

After discussing the nature and goal of the study, all mothers gave their written consent to participate in the research. All optional participants were initially presented to the researchers, who assured them that the data they were gathering would be kept fully confidential. They were informed that participating in the study was completely optional and that they could withdraw at any time without any penalty. The mother's personal information was kept private. Anonymity and confidentiality were assured.

Educational program:

After conducting a knowledge evaluation, the researchers created an instructional booklet in the form of a printed book to address the needs of mothers who have primary school children with ADHD (Arabic booklet). Information about ADHD

based on a review of relevant literature and online resources.

Field work:

The field work took place over the course of six months, from October 2021 to March 2022, with the program's implementation taking six months. Pre/post-testing takes one month, and the implementation of the program took five months. Mothers of children with ADHD were divided into ten small groups, each with five mothers. Each group had a total of five sessions; each session lasted from thirty to forty five minutes. Every participant received a descriptive brochure for the program, which contains every instructional resource. Every session normally begins with a revision of what has been covered in previous sessions as well as the goals for the new one. As a reward, the interested mothers were given praise and/or acknowledgment.

The actual work began with researchers meeting mothers at El Shaheed and Al Fath primary schools in Minia City. The researchers first introduced themselves to the mothers and gave them a complete background on the study, its purpose, and then distributed the pre-test format to collect the required data. When more information was needed, the researcher was available. The program's content was then developed based on the mothers' actual educational needs assessment .

As a result, the content of the participant's information has been organized into conceptual sessions. **Content of the first session** included the interviews with the mothers personally who were being investigated, an explanation of the study's purpose and duration by the researcher through face-to-face interaction, a mother lecture, a conversation, and a pre-test results. **Content of the second session** were definitions, causes, and signs and symptoms of ADHD. **The third session's** content: types, and diagnosis of ADHD. **The fourth session included**: treatment, and management of symptoms of ADHD. The topic of **the fifth session** was revision. A variety of teaching techniques, including lectures and small-group discussion, were used. These were included the use of videos and pictures for illustration. In order to get the necessary data, a post-test format was finally distributed.

Data analysis

A suitable personal computer was used to enter the data. The statistical analysis was carried out with the help of the SPSS-20 statistical software package. Each tool's content was evaluated, categorized, and coded. For qualitative variables, frequencies and percentages- based descriptive statistics were used, whereas in quantitative data, means as well as standard deviations were used. In the event of comparisons between the mean scores of the two examined groups, the Chi-square test was used to compare qualitative study variables. P. value<0.05 was utilized for statistical significance difference

Results:

Table (1): Distribution of mothers and their children according to their demographic characteristics (n= 50)

Items	No	%
1. Age in years of mothers:		
- less than 30 years	30	60
- 30<40 years	10	20
- 40 and more	10	20
Mean ± SD of mothers age	26.2 ± 17.1	
2. Formal education of mothers		
- Cannot read and write	8	16
- Secondary School	30	60
- Higher Education	12	24
- **Occupation of mothers**		
- Working	42	84
- Not working	8	16
3. Age of child		
- 6-9 years	38	76
- 9- 12 years	12	24
Mean ± SD of child age	7.5 ± 12.2	
4. Sex of primary school children:		
- Male	32	64
- Female	18	36

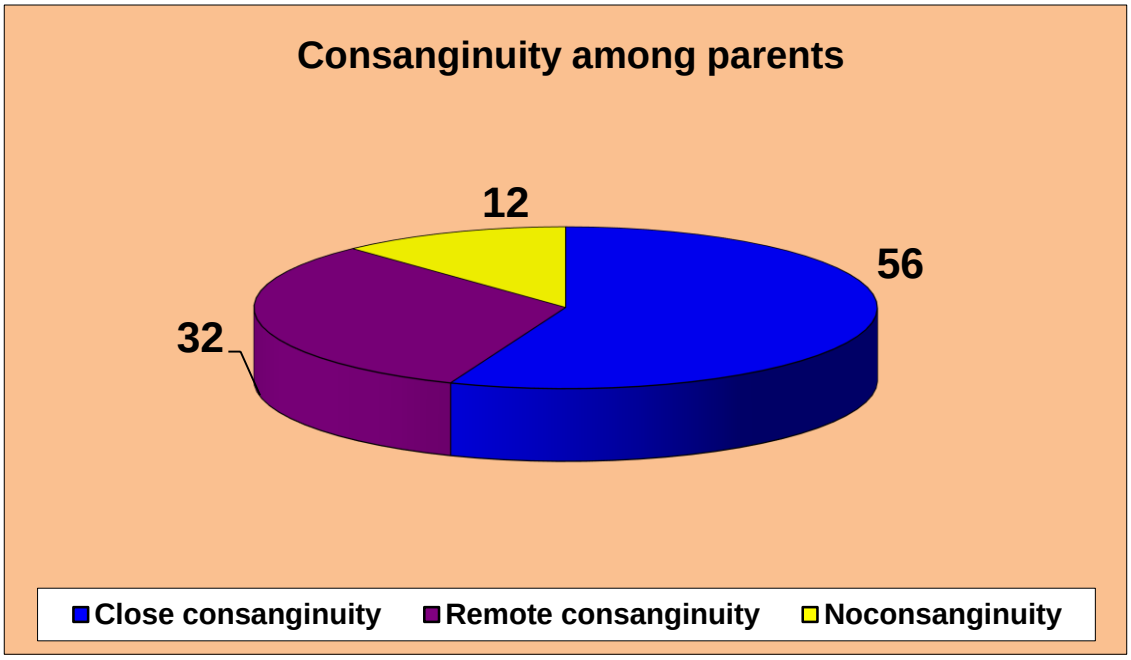

Fig. (1): Percent distribution of consanginuity among parents:

Table (2): Distribution of mothers according to their knowledge about ADHD on pre and posttests (n=50)

Items	Pre test		Post-test		X2	P. value
	No	%	No	%		
Definition of ADHD.						
- Correct	23	46	48	96	4.5	0.07
- Incorrect or Don't know	27	54	2	4		
Signs and symptoms ADHD						
- Correct	20	40	50	100	6.5	0.06
- Incorrect or Don't know	30	60	0	0.00		
Types of ADHD						
- Correct	0	0.00	45	90	6.3	0.01*
- Incorrect or Don't know	50	100	5	10		
Causes of ADHD						
- Correct	0	0.00	44	88	4.6	0.03*
- Incorrect or Don't know	50	100	6	12		
Diagnosis of ADHD						
- Correct	8	16	50	100	5.7	0.02*
- Incorrect or Don't know	42	84	0	0.00		
Treatment of ADHD						
- Correct	12	24	48	96	6.2	0.02*
- Incorrect or Don't know	38	76	2	4		
Managing symptoms of ADHD						
- Correct	5	10	50	100	5.4	0.03*
- Incorrect or Don't know	45	90	0	0.00		
Complications of ADHD						
- Correct	0	0.00	50	100	5.2	0.01*
- Incorrect or Don't know	50	100	0	0.00		

**= Statistically Significant difference*

Table (3): Distribution of mothers according to their managing symptoms of ADHD (n=50)

Items	Pre test		Post-test		X2	P. value
	No	%	No	%		
Developing healthy eating habits.						
- Yes	13	26	50	100	5.5	0.05*
- Don't know	37	74	0	0.00		
Participating in daily physical activity						
- Yes	10	20	48	96	5.8	0.03*
- Don't know	40	80	2	4		
Limiting the amount of daily screen time from TVs, computer, phones and others electronics						
- Yes	0	0.00	50	100	6.2	
- Don't know	50	100	0	0.00		0.01*
The recommended amount of sleep each night						
- Yes	8	16	47	94	5.8	0.03*
- Don't know	42	84	3	6		

*= *Statistically Significant difference*

Table (4): Distribution of the mothers' according to their level of empowerment on pre/post-test (no = 50)

Family Empowerment Scales	Pre test		Post-test		X2	P. value
	No	%	No	%		
- Low empowerment	30	60	7	14	5.20	0.02*
- Moderate empowerment	14	28	17	34	6.24	0.02*
- Higher empowerment	6	12	26	52	5.27	0.01*

*= *Statistically Significant difference*

Table (5): Distribution of the mothers' according to their level of quality of life in the pre/post-test (no = 50)

WHOQOL-BREF Scales	Pre test		Post-test		X2	P. value
	No	%	No	%		
Low	34	68	10	20	6.30	0.01*
Moderate	12	24	18	36	6.32	0.02*
High	4	8	22	44	5.22	0.01*

*= Statistically Significant difference

Table (6): Correlation between mothers knowledge, family empowerment and level of quality of life on pre and post-test n= 50

Pre-test	Post-test	
	Correlation Coefficient (r)	P. value
Knowledge	0.96	0.003*
Family empowerment scales	0.95	0.002*
World Health Organization Quality of Life- Brief	0.92	0.002*

*= Statistically Significant difference

Table (1): Showed that 60% of mothers are less than 30 years old, with a mean age of 26.2 ± 17.1 and 60% of them have completed secondary school education. Regarding occupation, most of mothers were working 84 %,

Figure (1): Indicated that 56% had close consanginuity among parents, 32% had remote consanginuity among parents, and 12% have no consanginuity among parents.

Table (2): Demonstrated that 46% of mothers had correct answers related the meaning of ADHD in the pretest compared to 96% of them in the post-test, in relation to ADHD symptoms, 40% of mothers in the pre-test and 100% of them in the post-test responded correctly the symptoms of ADHD with no

statistically significant differences. Statistically significant differences between pre and posttest of mothers' knowledge related to types, causes, diagnosis, treatment, managing symptoms and complications of ADHD (P. 0.01, 0.03, 0.02, 0.02, 0.03 and 0.01); respectively.

Table (3): Illustrated that 26% of mothers responded that they are developing healthy eating habits for their children in the pre-test compared to 100% of them in the post-test, regarding participating in daily physical activity, 20% of mothers in the pre-test and 96% of them in the post-test responded yes. None of mothers responded they are limiting the amount of daily screen time from TVs, computer, phones and others electronics in the pre-test result and 100% in the post-test result. Only 16% of mothers responded that they are recommending amount of sleep each night in the pre-test, increased to 94% of them in the post-test; with statistically significant differences (P. 0.05, 0.03, 0.01 and 0.03); respectively.

Table (4): Demonstrated that mothers levels of empowerment to carry their children. It was clear that, low level of empowerment measured at 60% of mothers in the pre/test and 14 % of them in the post/test, moderate level of empowerment measured at 28% of them in the pre/test and increased to 34% in the post/test while higher level of empowerment measured at 12% of mothered in the pre/test and increased to 52% of them in the post/test. The differences between the mothers with low, moderate, and higher levels of empowerment, were statistically significant (P. 0.02, 0.02, and 0.01); respectively.

Table (5): Displayed the quality of life of mothers who are raising their children. It was clear that low quality of life represent 68% of the pre/test result and 20 % of the post/test, moderate quality of life reflected 24% of the pre/test and 36% of the post/test and high quality of life displayed 8% of the pre/test and 44% of the post/test. However, this rise result in a statistically significant difference between the mothers who felt their quality of life was low, moderate, or high (P. 0.01, 0.02, and 0.01); respectively.

Table (6): This table shows the correlation between the total scores of mothers knowledge, family empowerment scales and World Health Organization Quality of Life- Brief in pre-test and post-test about ADHD. It is evident that the highest strong positive statistical significant correlation was found between the total scores of knowledge in pre-test and post-test program of mothers of primary school children about ADHD (r=0.96) P=0.003, the highest strongest statistical correlation, (r=0.95)P=0.002 was discovered between the total scores of family empowerment scales in the pre- and post-test program of mothers of primary school children about ADHD. the strongest, most statistical significant correlation was situated between the total scores of World Health Organization Quality of Life- Brief in pre-test and post-test program of mothers of primary school children about ADHD (r=0.92)P=0.002

Discussion

The most common childhood behavioral illness influencing children globally is Attention Deficit Hyperactivity Disorder (ADHD). It is estimated that three to five percent of school-aged children have it **(Barkley, 2017).** Pediatric nurses should assist mothers in developing themselves so that they can overcome their ineffectiveness and feelings of weakness and provide care for their children using their own strengths, interests, and chances **(Adams, 2008)** Individual capacities require empowerment in order for them to exercise their own authority and accept personal responsibility for their activities. This can be accomplished through participation and education **(Capacity Building Center for States. 2016).**

More over half of the mothers in the current study were less than 30 years old, with a mean age (26.2 ± 17.1). Additionally, it was stated that more than half of the mothers had completed education from a secondary school, less than fifth of them have been illiterate; that the majority of studied sample were working. As well, this finding was not similar with finding of **Mohammad et al., (2019)**, who conducted a study about quality of life in the mothers of children with attention deficit hyperactivity disorder and its effective factors. Who mentioned that the mean age of the mothers in this study was 39.5 years and that about three quarters of them (74.5 percent) only had a high school diploma at the Faculty of Nursing Ain Shams University, the mother s had less education,

less experience, and more worries about their children when their first child was born.

This finding is similar to that of **Thomas et al. (2018)**, who conducted a study about physical function emotion and behavior problem in children ADHD and mentioned that almost all of studied children were in primary school in both private and public schools. As well as, this finding was in accordance with finding of **Mohamed et al., (2016)**, who explained that in their study about sleep disorder on children attention deficit hyperactive disorder at the Faculty of Nursing Ain Shams University, the mothers at the time of birth of first child were young they tended to have less education, less experience and more worries about their children.

About occupation of mothers, the study finding illustrated that majority of mothers were (working). this finding is not similar to those obtained by

Podolski, (2015), who found that three quarters of the mothers have unemployed in his study which about parent stress and coping relation to child ADHD severity and associated child disruptive behavior problems. in addition this result is matched with that finding of **Mahmoud, (2010),** who studied the impact of play therapy program on attention and activity of school age children with attention deficit hyperactivity disorder, at Cairo University's Faculty of Nursing, where he discovered that the majority of the mothers in the study sample were housewives, accounting for four fifths of the total.

In the current study there were more than half of mothers had close consanguinity, the rest had no consanguinity, while around one third had remote consanguinity. This outcome was in consistent with **Anwar, et al., (2014)** which stated that close consanguinity accounted for around twenty two percent of all marital parents in Egypt and was more prevalent in rural areas. Percentage of people who are consanguineous or have relatives varies from 20% to 33% in a variety of resea rch. In Egypt, the rate of expansion and increase of consanguineous associations varied depending on where people lived. In Upper Egypt, it increased from 25.4percent in Lower Egypt to 55.2 percent.

The present study revealed that less than half of mothers had no correct knowledge about meaning, signs and symptoms, treatment and managing the symptoms of ADHD in the pre-test but majority of them in the post-test have correct knowledge about meaning, signs and symptoms and managing the symptoms of ADHD. This finding is consistent with finding of **Mahmoud, (2010)**, who stated that caregivers' knowledge of ADHD and sleep disorder was inadequate prior to the program but it increased after the program was implemented.

In the present study, the mothers' quality of life in taking care of their children with ADHD was low in the pre/test which represented in more than half participants and decreased to twenty percent in post/test results, while moderate quality of life reflected more than twenty percent of mothers in the pre/test and increased to more than thirty five in the post/test and high quality of life among mothers was only eight percent in the pre/test and increased to forty four percent in the post/test. Results of the present study are also similar to **Pour and Kasaei, (2013)** who found that parents of children with attention deficit hyperactivity disorder (ADHD) have a poorer degree of marital satisfaction in their study of family functioning in children with ADHD. According to **Cappe et al., (2017) who** reported that the quality of life of parents of ADHD children might be negatively impacted. As a result, knowing about the quality of the life of mothers is beneficial. The mothers' quality of life in caring for their children with ADHD was investigated in this study.

In the present study the mothers' quality of life in taking care of their children with ADHD, It was demonstrated that, moderate quality of life was twenty four percent in the pre/test and improved to hirty six in the post/test. **Azazy et al., 2018** examined the quality of life in one hundred twenty five parents of ADHD children, Another study looked into the elements that influence the quality of life of mothers with ADHD children. To assess the quality of life, the WHO Quality of Life-BREF was utilized.

The present study revealed that highest strong positive statistical significant correlation were found between the total scores of mothers knowledge, empowerment scales and quality of life in pre-and post-test result of the program. This outcome can derive from mothers' increased knowledge through training that empowering them to have more information and act wisely. These outcomes have been line in those of **Abd El-Gawad, (2017)** those who found a statistical significant positive association between mothers' total knowledge, total behavior, and that this association improved when mothers were fully empowered to care for their children. Positive self-perception of competence was revealed to be the most powerful individual factor in promoting resilience and overall quality of life in children with ADHD **(Dvorsky & Langberg, 2016).**

Conclusion:

From the current study, it can be concluded that, mothers who involved in the study did not have the baseline data about ADHD before education (pre-test). And, mothers' knowledge and actions regarding ADHD were improved after the establishment of the educational program and involvement (post-test). In addition, the pre-and post -test program results showed the strongest positive statistically significant correlation between the total scores of mothers' knowledge of ADHD, empowerment measures, and quality of life scales. Mothers' empowerment was also low in the pre/test but increased to be high in the post test results, with a statistical significant difference between both. Following the instruction, it was discovered that the mothers' quality of life in caring for their children with ADHD was high in the post/test results, and there was a statistically significant difference between pre and post/tests.

Recommendations:

1- Periodic educational program should empower and engage mothers for caring their children who have ADHD.
2- Maintain the quality of life of mothers with ADHD children through a health recurrent

education program and periodic follow up in order to improve their quality of life and avoid complications.

3- To raise public health awareness regarding ADHD, orientation initiatives on mass media such as television should be implemented.

4- Future studies are needed to create and refine therapies based on social empowerment in order to maintain quality of life.

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