

Effectiveness of Psycho-educational Nursing Program on Feeling of Burden and Psychological Capital among Caregivers of Children with Attention Deficit Hyperactivity Disorder

Amal Abd Elsalam Abd Elazeem¹, Maaly Ibrahim Elmalky², Mawaheb Mahmoud Zaki³ and Eman Nabawy Abo Zeid⁴

¹ Assistant Lecturer of Psychiatric & Mental Health Nursing, Faculty of Nursing, Benha University, Egypt

² Professor of Psychiatric & Mental Health Nursing, Faculty of Nursing, Menoufia University, Egypt

³ Professor of Psychiatric & Mental Health Nursing, Faculty of Nursing, Benha University, Egypt

⁴ Assistant Professor of Psychiatric & Mental Health Nursing, Faculty of Nursing, Benha University, Egypt

Background: Caregivers of children with ADHD often experience emotional and physical stress because of increasing demands of the child condition. Psycho-education program is a novel treatment paradigm including information about ADHD and its treatment, aid to develop coping skills for empowerment psychological capital and decrease feeling of burden among caregivers of children with ADHD. **Aim:** This study aimed to evaluate the effectiveness of psycho-educational nursing program on feeling of burden and psychological capital among caregivers of children with attention deficit hyperactivity disorder. **Research design:** A quasi-experimental research design was utilized to achieve the aim of the study. **Setting:** The study was conducted at the children outpatient clinics at Psychiatric and Mental Health Hospital and Addiction Treatment at Benha city, Qalubia governorate which is affiliated to General Secretariat of mental health. **Subject:** A purposive sample of (٦٠) caregivers of children with ADHD was utilized in this study. **Tools:** Three tools were used for data collection: **Tool (١):** - A structured interviewing questionnaire sheet included socio- demographic data of studied caregivers, socio- demographic and clinical data of the affected children as well as caregivers' knowledge about ADHD. **Tool (٢):** - Zarit burden interview scale & **Tool (٣):** - Psychological capital questionnaire. **Results:** The result of the present study revealed that more than three quarters of the studied caregivers had satisfactory knowledge about ADHD, less than three quarters had high psychological capital level and less than one quarter of the studied caregivers had moderate burden level post-program implementation than before. **Conclusion:** Psycho-educational nursing program had a positive effect on feeling of burden and psychological capital among the studied caregivers of children with ADHD. **Recommendations:** Counseling services of caregivers and their children with ADHD will be needed at every psychiatric hospital.

Key words: ADHD, Burden, Psycho-education, Psychological capital.

Introduction:

Attention-deficit hyperactivity disorder (ADHD) is the commonest psychiatric disorder of children that can profoundly influence many dimensions like the well-being, academic achievement, and social interactions of children. ADHD associated with at least ٦ symptoms of inattention and/or at least ٦ symptoms of hyperactivity and impulsivity. the diagnoses can be specified as a predominant inattentive, predominant hyperactive/impulsive, or combined type. To date, no single factor has been specified as the clear cause of this disorder. However, it is thought to be a result of complex interactions

between factors like genetic, environmental and neurological one (Harb et al., ٢٠٢٥).

ADHD places a significant burden on caregivers that causes by several factors which interfere with the parent-child relationship and raise the risk for parental stress. The difficulties that caregivers experience include challenging child behaviours, difficulties attending to siblings when caring for a child with ADHD, and lack of support from professionals. Theses challenging have also been suggested to interfere with the development of attachment security among children with ADHD (Chandrakar et al., ٢٠٢٥).

Unfortunately, parents hold a burden of caring for children with ADHD worldwide perform their parental and non-parental tasks less well than parents of normal children. Parental physical, mental, social, and psychological tiredness will increase consequently as the child grow older hence negatively impact the children's health. In addition to this, the primary caregiver must spend more money and use more services to care for the child. Studies showed that those caregivers feel more fatigue, depressed, hopeless, guilty and embarrassed. As a result, this disease will impact significantly on the child's parents and other family members and impact their productivity at work and also their physical and mental well-being suffer and become more fearful of what lies ahead (Amro, ۲۰۲۴)

Caregivers need psychological capital to deal with the challenges they are facing in raising a child with ADHD. Research findings indicate that when parents' mental health is compromised, their levels of hope, optimism, tolerance, and resilience diminish, affecting their capacity to effectively handle challenges. This, in turn, reduces their self-efficacy in parenting and can have negative effects on the individual's psychological capital. Studies have demonstrated that families with children with ADHD often display lower levels of psychological capital and its components and increase their feeling of burden (Mesfin & Habtamu, ۲۰۲۴).

Psycho-education program for caregivers of children with ADHD can require different approaches in which learning about ADHD and behavioral strategies can help parents cope with their feeling of burden and provide a nurturing environment for their children. Furthermore both caregivers and children may need special help to develop techniques for managing the pattern of behavior such as health care providers can counsel the child and the family, helping them to develop new skills, attitude and ways of

relating to each other. Moreover, assists the family in finding better ways to handle the disruptive behaviors and promote change and teaching them techniques for coping with and improving their child's behavior (Salem & Abdelsalam, ۲۰۲۱).

Psychiatric and mental health nurses prioritize strategies that strengthen psychological capital and reduce feeling of burden of caregivers of children with ADHD by providing resources for stress management control negative thoughts and time management, and by offering support to caregivers that leverage their experiences while addressing potential physical health challenges. This is crucial for caregivers of children in this age group where family resilience has a significant positive impact on well-being. Nurses need to focus on enhancing family communication skills, as well as providing targeted support especially for mothers and older caregivers. Introducing programs that foster family bonding and effective communication is crucial as children enter school age (Tareen et al., ۲۰۲۵).

Significance of the study:

ADHD is a life-long disorder; for this reason, poor management may lead to adverse functional outcomes, as the child shifts towards adolescence and adulthood. Worldwide, children between the ages of ۵ and ۱۹ are projected to account for ۷.۲% (۱۲۹ million) of all cases of ADHD. (Mohamed & Mohammed, ۲۰۲۴). It involves boys three times more than girls and happens about from ۳% to ۱۱% or more of all children. Over ۵۰% of children diagnosed with ADHD in early childhood experience these symptoms into adulthood and influence ۲% to ۹% of children of school age (Yurdakul et al., ۲۰۲۴).

In Egypt, The reported occurrence of ADHD among primary school children ranged between ۶.۵% and ۷.۹%. Moreover, in a study conducted in Egypt studying the frequency of ADHD symptoms in a sample of school-age

Egyptian youngsters was ٢٠.٩% of the sample had the disorder. Additionally, impulsive-hyperactive disorder, psychosomatic illness, conduct disorder, learning disability, and anxiety disorder all had favorable correlations with ADHD (Chukwuemeka & Obioha, ٢٠٢٤ & Alothman et al., ٢٠٢٤).

Aim of the study:

This study aimed to evaluate the effectiveness of psycho-educational nursing program on feeling of burden and psychological capital among caregivers of children with attention deficit hyperactivity disorder.

This aim was achieved through:

١. Assessing the level of knowledge, feeling of burden and psychological capital among caregivers of children with ADHD.
٢. Designing the psycho-educational nursing program on feeling of burden and psychological capital among caregivers of children with ADHD.
٣. Implementing the psycho-educational nursing program on feeling of burden and psychological capital among caregivers of children with ADHD.
٤. Evaluating the effectiveness of psycho-educational nursing program on feeling of burden and psychological capital among caregivers of children with ADHD.

Research hypothesis:

The psycho-educational nursing program will have a positive effect on feeling of burden and psychological capital among caregivers of children with ADHD.

Subject and methods:

Research design: -

A quasi-experimental research design (pre and posttest) for one group was utilized to achieve the aim of the study.

Setting: -

This study was conducted at the children outpatient clinics at Psychiatric and Mental Health Hospital and Addiction Treatment at Benha city, Qalubia governorate which is affiliated to General Secretariat of mental

health. Children outpatient clinic working from (٩ Am to ٢ Pm) specified ٢ days (Monday and Thursday) for examination and following up the children with ADHD. It serves all children with psychiatric disorders for treatment and follow up.

Subject:-

-A purposive sample of (٦٠) caregivers of children with ADHD were attended at the above-mentioned setting. The sample size calculated by using the following formula:

$$n = \left\lceil \frac{N \times p(1-p)}{\left[N-1 \times \left(d^2 \div z^2 \right) \right] + p(1-p)} \right\rceil$$

(Thompson, ٢٠١٢).

-The sample was taken according to the following inclusion criteria:(١) Caregivers whose children aged from ٦ - ١٨ years, (٢) Caregivers from both sexes and have willingness to participate in the study (٣) Caregivers who free from psychiatric disorders, neurological disorders and visual and hearing impairments and (٤) Caregivers whose children are free from other psychiatric disorders.

Data collection instruments:-

Data collected by the following instruments:

Instrument (١): - A Structured Interviewing Questionnaire Sheet:

The questionnaire was developed by the researcher based on scientific review of literature and consists of three parts:

Part (١): Socio- demographic data of the studied caregivers which include degree of relation, age, marital status, level of education, residence, occupation, number of family members and family income.

Part (٢): Socio- demographic and clinical data of the affected children: -

A- Socio-demographic of the studied children which included age, sex, educational level of education, type of school that the child attend and child birth order)

B- Clinical data of the affected children which included subtype of ADHD, family history, number of sleep hours, type of treatment, number of treatment sessions and source of health services)..

Part (٣): knowledge of the studied caregivers about ADHD developed by the researcher and included definition, causes, symptoms, diagnosis, ways of treatment, medication, uses, side effects of medications ways for dealing with the child and the goal of behavior therapy.

Instrument (٤): The Zarit burden interview scale: - This scale was originally developed by **Zarit et al., (١٩٨٥)**. It was the most commonly used scale for assessment the level of burden among caregivers of children with ADHD. It consisted of ٢٢ items which rated on a three point likert scale ranging from ٠=never, ١= sometimes and ٢= always.

Scoring system:

The total score was calculated by summing up all item responses. It ranged from (٠ to ٤٤), with higher scores indicating greater burden

- No burden if scores (٠-١٠)
- Mild burden if scores (١١-٢٠)
- Moderate burden if scores (٢١-٣٠)
- Severe burden if scores (٣١-٤٤)

Instrument (٥): Psychological capital questionnaire (PCQ): -

The scale was originally developed by **Luthans et al. (٢٠٠٧)**. It is the most commonly used scale for assessment of psychological capital. It consists of ٢٤ items that divided into four subscales which measure four main categories (hope, self-efficacy, resilience and optimism). Each of the four subscales has ٦ items which assessed on a ٣-point likert scale ranging from ١= disagree, ٢= somewhat agree and ٣= strongly agree. There are **three reversed items** number ١٣, ٢٠, ٢٣.

Scoring system:

The total scores of Psychological Capital questionnaire ranged from (٢٤ to ٧٢) with higher scores indicated higher level of psychological capital. To get the total score of

the scale the researcher firstly, reversed of scores of the three items (١٣, ٢٠ & ٢٣) and then each scale item was graded and then added together to give total score.

Scoring system indicated the following:

- Low if scores (< ٥٠%) ٢٤-< ٣٦ grades
- Moderate if scores (٥٠-< ٧٥%) ٣٦ -< ٥٤ grades
- High if scores (> ٧٥%) ٥٤ - ٧٢ grades

Methods of study

The present study was conducted in four phases.

١- Preparatory phase (development of instruments)

This phase included reviewing of relevant literature and different studies related to the topic of research, using textbooks, articles, magazines, periodicals, and internet search was done to get a clear picture of all aspects related to the research topic to design the program then after reaching to final form of tools the researcher work on measure their validity and reliability.

Content validity of the tools:

- Content validity of tools was done by jury of ٥ experts in Psychiatric & Mental Health Nursing, who checked the relevancy, comprehensiveness, clarity and applicability of the questions. According to their opinions, modifications were done and the final form was developed.
- The modifications were included (Arabic translation then modification in the style of some words of the tools to give the right meaning of the phrases for all tools to become easier and more understandable for all studied caregivers.
- Zarit burden interview scale their likert scale responses changed from five responses to three likert scale.
- Psychological capital questionnaire their likert scale responses changed from six responses to three likert scale.

Reliability of the tools:

Reliability of tools: The internal consistency of the tools was checked by Alpha Cronbach reliability analysis.

Tools	No. of items	Alpha Cronbach	Indicator
knowledge of the studied caregivers about ADHD	١٠	٠.٧٤٨	Strong reliability
Zarit burden interview scale	٢٢	٠.٧٨٩	strong reliability
Psychological capital questionnaire	٢٤	٠.٩١٩	strong reliability

A pilot study:

Before starting the work, a pilot study was carried out on ١٠% (٦ caregivers) of the sample, This was done to determine how long it would take to complete the forms and to find any issues or barriers during data collection, after which the required adjustments were made. The main study sample did not included it was found that each caregiver took ٤٠-٥٠ minutes to fulfill tools of the study.

Ethical considerations:

- The study setting was approved by Benha University's Faculty of Nursing's Scientific Ethical Committee to collect the necessary data (REC.PSY.N P٧٦). To get their consent to gather the required data, the dean of the Faculty of Nursing also sent an official letter to the head of the hospital authorities in the designated setting.
- After receiving a thorough description of the objectives and design of the study, the participants gave their consent, indicating that
- they were willing to participate.
- Strict standards were followed throughout the study to protect participant confidentiality. Only the researcher had access to all the gathered information. The top aim was to protect the confidentiality and privacy of the participants.

Field work

The study was conducted in seven months and two weeks from the middle of December till the end of July. It is implemented through four

phases: assessment, designing, implementing and evaluation phase

Phase one: Assessment phase:

- The caregivers interviewed in a comfortable room in the children outpatient clinic.
- Before gathering data, the researchers welcomed the caregivers, went over the purpose, time frame, and activities of the study, and got their consent to take part.
- Tools (pre-test) were distributed individually to the study subjects. In the presence of researchers, patients filled out the forms, asking questions and seeking help as necessary.
- The interview lasted ٣٠ to ٤٠ minutes, two days a week, from ٩ AM to ٢ PM, with six to eight caregivers per day, and took around ٧ months.
- Determining the study subject's needs as a starting point for the psychoeducational program was the goal of this phase

Phase two: Designing phase (development of the program):-

-Based on the results obtained from the assessment tools and review of literature the program content was developed by the researcher in the form of a booklet. Each theoretical and practical session of psycho-educational nursing program contains a set of general and specific objectives. The objective of the program

General objectives of the program:

After complete implementation of psycho-educational nursing program caregivers should be able to learn how to decrease feeling of burden which will enhance psychological capital among caregivers of children with ADHD.

Specific objectives of the program:

At the end of the psycho-educational nursing program the caregivers will acquire knowledge and practical skills about:

The three theoretical sessions aimed at provide overview about definition, causes, risk factors, types, signs and symptoms, treatment and complications of ADHD.

Furthermore, acquire knowledge about definition, signs and symptoms, sources of feeling of burden and ways to cope with it and acquire knowledge about definition, component, importance of psychological capital and ways to enhance it.

The program also include 8 practical sessions which aimed at apply right practices and different techniques for reduce feeling of burden and enhance psychological capital among caregivers of children with ADHD which include (muscle relaxation techniques, optimistic and positive thinking, get ride of attachment to negative thoughts, and improve social coping skills. develop self-control skills, assertiveness skills, time planning and problem solving,

The final booklet was distributed for all studied caregivers of children with ADHD in the first session to make them familiar with the program contents and provide knowledge helping them in reflecting their own experiences.

Phase three: Implementation phase:-

1. The program consisted of 12 sessions (1 introductory session, 2 theoretical and 8 practical and a final session summary for all the earlier sessions including a post-test).
2. The studied caregivers attended the children at the children outpatient clinics twice per month (every 2 weeks).
3. The researcher divided 10 studied caregivers into 2 subgroups. Each subgroup consists of 5 studied caregivers and each subgroup was attending a total of 12 sessions.
4. The researcher met the first three subgroups twice monthly who followed up at the children outpatient clinics on Monday every two weeks. These three subgroups attended all 12 sessions of the program in a period of 6 months.
5. The second three subgroups who followed up at the children outpatient clinics on Thursday every two weeks were met by the researcher and attended 12 sessions of the program in a period of 6 months.

6. The estimated time of the program for 2 subgroups was about 2 months and two weeks (2 month for pre-test and 6 months for program session) during the period of (the middle of december 2022 to the end of July 2023).

- To ensure the caregivers' understanding of the program contents, each session was started with a summary about what was given through the previous session and the objectives of the new session were mentioned taking into consideration using simple language to suit all the studied caregivers.
- During the session, the researcher used several teaching methods such as lecture, discussion, brainstorming, and demonstration, re-demonstration, role-play & modeling. video, pictures and booklet were used as media to facilitate explanation and to be a reference for them.
- The researcher made a summary, feedback, further clarifications were done for vague items at the end of the session and told the caregivers about the time of the next session and give the studied caregivers homework which was discussed in the next session.
- After finishing, the researcher thanked the studied caregivers for their participation and encouraged them to ask about any unclear points.

Phase four: Evaluation phase (Post-test):

This phase was carried out at the end of the program following the same pattern of interviewing (posttest) using the pervious assessment tools for data collection to compare the effect of the psycho-educational nursing program pre and post implementation.

Statistical analysis:

The collected data organized, tabulated and statistically analyzed using Statistical Package for Social Science (SPSS) version 20 for windows, running on IBM compatible computer. Descriptive statistics were applied (e.g. frequency, percentages, mean and standard deviation). Test of significance,

qualitative variables were compared using Chi square test, quantitative variables were compared using paired t test. Correlation coefficient test (r) was used to test the correlation between studied variables. Linear regression model was used to analysis of the predictors of knowledge, burden and psychological capital among caregivers of children with ADHD. Reliability of the study tools was done using Cronbach's Alpha.

Significance levels were considered as follows:

- Highly statistically significant $P < 0.001^{**}$
- Statistically significant $P < 0.05^*$
- Not significant $P \geq 0.05$

Results:

Table (1): Shows that, more than three quarters of the studied caregivers (78.3%) are mothers, less than half of them (26.7%) are between 30-40 years old, with Mean \pm SD age is 38.71 ± 7.05 years. Less than three quarters of them (70.0%) are married. Less than half of them (26.7%) have secondary education. Majority of them (80.0%) aren't work. Majority of them (83.3%) live at rural areas. Majority (80.0%) of them have 1-6 members and less than three quarters of the studied caregivers (71.7%) haven't enough income.

Table (2): Shows that, more than half of the studied children (58.3%) are between 1-4 years old, and the Mean \pm SD age is 3.80 ± 1.66 years. the Majority of them (81.7%) are males. The vast majority of them (90.0%) have primary education. More than half of them (56.7%) are at governmental schools with integration classes and less than half of them (20.0%) are the first child.

Table (3): Illustrates that, less than three quarters of the studied children (73.3%) have combined type (attention deficit hyperactivity disorder). More than half of the studied children (51.7%) have family history (nearly two thirds of them (66.7%) are second degree relatives). Less than half of them (28.3%) sleep 6 < 8 hours daily. Majority of them (81.7%) receive medications and behavioral treatment sessions and majority of them (81.7%) receive health services from governmental health sector.

Figure (1) shows that, there is a highly statistically significant improvement in total level of caregiver's knowledge about ADHD post implementation of psycho-educational nursing program than before program at p-value < 0.001 . As evidence, one quarter (26.7%) of the studied caregivers who have satisfactory level of total knowledge about ADHD pre-program implementation are changed to be more than three quarters (78.3%) post implementation of psycho-educational nursing program

Figure (2) illustrates that, Shows that, there is a highly statistically significant decrease in total levels of feeling of burden among the studied caregivers post implementation of psycho-educational nursing program than before at p-value < 0.001 . As evidence, more than half of the studied caregivers (58.3%) experience moderate burden pre-program implementation were changed to be less than one quarter (20%) post implementation of the psycho-educational nursing program.

Figure (3): Shows that, there is a highly statistically significant improvement in the levels of caregivers' psychological capital post implementation of psycho-educational nursing program than before at p-value < 0.001 . As evidence, the minority (18.3%) of the studied caregivers have high level of psychological capital pre-program implementation are changed to be less than three quarters (70.0%) post implementation of the psycho-educational nursing program.

Table (4): Shows that, there is highly statistically significant positive correlation between total knowledge and total psychological capital mean scores among caregivers of children with ADHD pre and post program implementation at $p < 0.001$. While, there is highly statistically significant negative correlation between total burden and total knowledge and total psychological capital mean scores among caregivers of children with ADHD pre and post program implementation at $p < 0.001$.

Table (١): percentage distribution of the studied caregivers according to their socio-demographic data (n=٦٠).

Socio-demographic data of the studied caregivers	Studied caregivers (n=٦٠)	
	No	%
Degree of relation		
Father	٣	٥.٠
Mother	٤٧	٧٨.٣
Brother	١	١.٧
Sister	٢	٣.٣
Grandmother	٤	٦.٧
Uncle	٢	٣.٣
Aunt	١	١.٧
Age (years)		
٢٠- < ٣٠	١٦	٢٦.٧
٣٠- < ٤٠	٢٨	٤٦.٧
٤٠- < ٥٠	١٢	٢٠.٠
≥ ٥٠	٤	٦.٦
Mean ± SD ٣٨.٧١ ± ٧.٥٤		
Marital status		
Single	٣	٥.٠
Married	٤٢	٧٠.٠
Widowed	٧	١١.٧
Divorced	٨	١٣.٣
Education level		
Illiterate	٣	٥.٠
Read and write	٤	٦.٦
Primary education	٣	٥.٠
Preparatory education	٩	١٥.٠
Secondary education/Diploma	٢٨	٤٦.٧
High education	١٣	٢١.٧
Occupation		
Working	١٢	٢٠.٠
Not working	٤٨	٨٠.٠
If the answer is "working", what is the type of work? (n=١٢)		
Employee at governmental sector	٦	٥٠.٠
Employee at private sector	٤	٣٣.٣
Free work	٢	١٦.٧
Residence		
Rural	٥٠	٨٣.٣
Urban	١٠	١٦.٧
Number of family members		
٣ members	٣	٥.٠
٤-٦ members	٥١	٨٥.٠
More than (٦) members	٦	١٠.٠
Family income		
Not enough	٤٣	٧١.٧
Enough	١٣	٢١.٧
Enough and can be saved	٤	٦.٦

Table (٢): Percentage distribution of socio-demographic data among the studied children (n=٦٠).

Socio-demographic data of the studied children	Studied children (n=٦٠)	
	No.	%
Age (years)		
٦- < ٩	٣٥	٥٨.٣
٩- < ١٢	١٩	٣١.٧
١٢- < ١٥	٤	٦.٧
١٥- ١٨	٢	٣.٣
Mean ± SD ٧.٨٥ ± ٤.٦٦		
Sex		
Male	٤٩	٨١.٧
Female	١١	١٨.٣
Education level		
Primary education	٥٤	٩٠.٠
Preparatory education	٤	٦.٧
Secondary education/ Diploma	٢	٣.٣
Type of school that the child attends		
Governmental schools	١٩	٣١.٧
Private schools	٤	٦.٦
Governmental schools with integration classes	٣٤	٥٦.٧
Experimental schools	٣	٥.٠
Child birth order		
First child	٢٤	٤٠.٠
Second child	١٣	٢١.٧
Third or more	٢٣	٣٨.٣

Table (٣): Percentage distribution of the clinical data among the studied children (n=٦٠).

Clinical data of the studied children	Studied children (n=٦٠)	
	No.	%
Type of attention deficit hyperactivity disorders		
Predominantly inattentive type	٧	١١.٧
Predominantly hyperactive / impulsive type	٩	١٥.٠
Combined type	٤٤	٧٣.٣
Is there a family history for this disease?		
Yes	٣١	٥١.٧
No	٢٩	٤٨.٣
If the answer is "yes", what is the degree of relationship? (n=٣١)		
First degree relatives	١١	٣٥.٥
Second degree relatives	٢٠	٦٤.٥
Number of sleep hours		
< ٣ hours	٤	٦.٧
٣ - < ٦ hours	٢٧	٤٥.٠
٦ - < ٨ hours	٢٩	٤٨.٣
Type of treatment the child receives		
Medications only	١١	١٨.٣
Behavioral treatment only	٠	٠.٠
Both medication and behavioral treatment	٤٩	٨١.٧
Number of treatment sessions per week (n=٤٩)		
Once	٢٦	٥٣.١
Twice	٢١	٤٢.٩
Three times	٢	٤.٠
Source of health services for family		
Governmental health sector	٤٩	٨١.٧
Private health sector	٠	٠.٠
More than one source	١١	١٨.٣

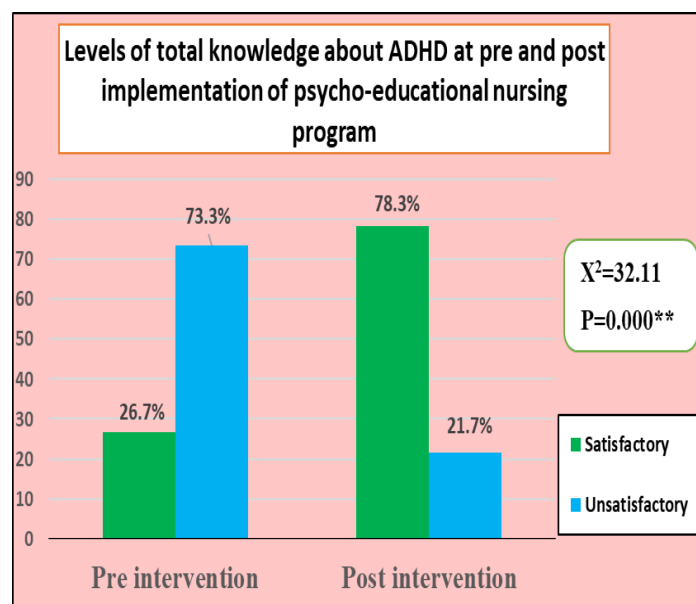


Figure (١): Levels of caregivers' knowledge about ADHD pre and post implementation of psycho-educational nursing program (n=٦٠).

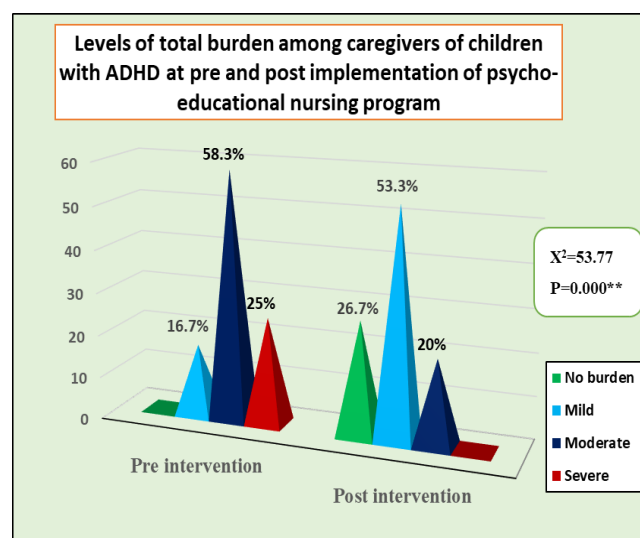


Figure (٢): Levels of burden among caregivers of children with ADHD pre and post implementation of psycho-educational nursing program (n=٦٠).

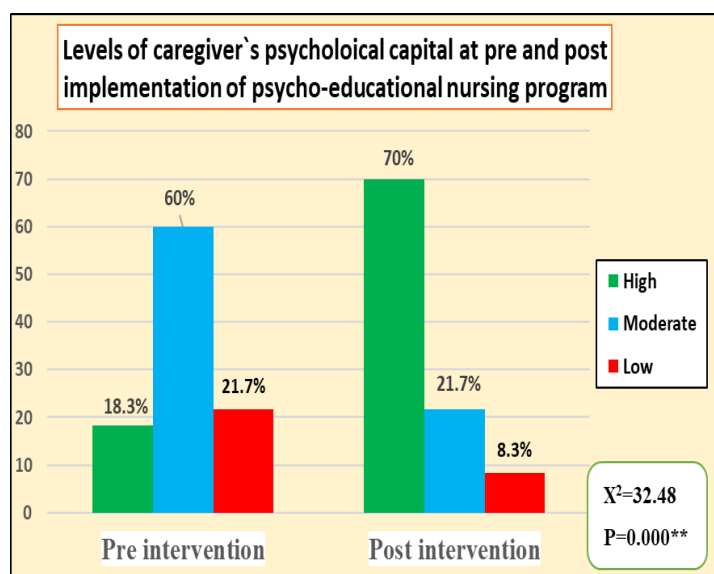


Figure (٣): Percentage distribution of total level of caregivers' psychological capital pre and post implementation of psycho-educational nursing program (n=٦٠).

Table (٤): Correlations between total knowledge about ADHD, total burden and total psychological capital mean scores among the studied caregivers pre and post program implementation (n=٦٠).

Variables		Total knowledge score		Total psychological capital score	
		Pre	Post	Pre	Post
Total knowledge score	R P			٠.٦٨٩ ٠.٠٠٠**	٠.٨٢٤ ٠.٠٠٠**
Total burden score	R P	-٠.٦٦٤- ٠.٠٠٠*	-٠.٨٢٩- ٠.٠٠٠**	-٠.٩١٥- ٠.٠٠٠**	-٠.٨٣٧- ٠.٠٠٠**

Discussion:

Data emerging from the present study showed that, more than three quarters of the studied caregivers are mothers and less than half of the studied caregivers are aged ٣٠- <٤٠ years with Mean \pm SD of age is 38.71 ± 7.04 years this may be due to that Egyptian family culture that, mothers have more responsibility compared to fathers in caring for children with ADHD; have more interactions with health-care providers and teachers. In addition to this, the most common age of marriage in Egypt is ٢١ years so that the age of ٣٠ and more is the logical ages of parents have school age children and

also more than three quarters of the studied caregivers are mothers and less than three quarters of them are married at this study and most of mothers has children at school age in which the affected children are aged ٦- <٩ years

Regarding educational level, less than half of the studied caregivers have secondary education. From researchers' point of view these results could be due to the sample taken from governmental hospital which serves many rural areas and according to rural culture many girls didn't have the interest to reach high level of education as secondary education may be seen as the most attainable level of education for girls.

The present study results illustrated that the majority of the studied caregivers weren't work and their income is not enough from researchers' point of view these results could be due to an increased percentage of unemployment in rural areas and mothers preferred housework rather than employment. Furthermore, this may be due to increase in caregiver's daily living finance and the cost of treatment and follow-up for their children.

Concerning to caregivers residence, the present study results illustrated that the majority of the studied caregivers live at rural areas and their family consisted of ٤-٦ members. From researchers' point of view these results could be due to the sample taken from governmental hospital which serves many rural areas in Addition to this In many rural or traditional communities, larger families are common due to cultural or religious values and in rural communities larger families thought to be can provide more informal caregiving support, which makes it easier to manage a child with ADHD at home.

Regarding socio-demographic data of ADHD children, the current study reveal that, more than half of the studied children are aged ٦- <٩ years with the Mean \pm SD of age is 7.85 ± 1.77 years this may be due to

that most of children diagnosed with ADHD when go to school when ask him to keep calm and give attention for their studying and this the time that physician need obtain information from at least ٢ places (home & school) to diagnose the disease. The results of this study was in accordance with a study conducted by **Hamed**, (٢٠٢٢). Which entitled (The Effect of Behavioral Training Program on Stress among Parents of Children with Attention Deficit Hyperactivity Disorder) and revealed that the mean age of the studied Children was ٧.٣٦±١.٩٧.

Regarding sex, the majority of them are male from researcher point of view may be due to that the prevalence rate of ADHD most common at males more than females especially the most common type affect the studied children is the combined type attention deficit hyperactivity disorder also may males tend to exhibit hallmark symptoms of hyperactivity and disruptive behaviors than girls. As regard to educational level, the vast majority of the studied caregivers have primary education from the researcher point of view may be due to that more than half of the studied children are aged ٦- <٩ years this is the age of primary education. As well as, more than half of them are at governmental schools with integration classes this may be due to that the academic achievement of those children become poor due to their poor performance and attitude make the school need to join them to integration classes for enhancement their academic achievement.

Furthermore, the results of the present study reveal that less than half of the studied children are the first child from the researcher point of view this may be due to that higher prevalence was reported in the first child birth order may be attributed to increased risk of complicated pregnancy in primigravida and the lack of experience of mothers to deal with the first baby while on the second or third child she become have

enough experience and doesn't need to go to the clinic much.

Regarding clinical data of ADHD children the current study reveal that less than three quarters of the studied children have combined type (attention deficit and hyperactivity). This may be due to that the combined type is the most prevalent type affect children especially males. As regard to family history, more than half of the studied children have family history in which less than two thirds of them are second degree relatives. From researcher point of view may be due to that the most dangerous risk factor of the disease is the genetic factor which plays an important role in causing the disease.

Regarding to sleeping hours, less than half of the studied children sleep ٦ < ٨ hours daily hours this may be due to that they take medication prescribed for them regularly and effect of of medication make the child calm and sleep at least ٦ hours. As well as, the majority of them receive medications and behavioral treatment sessions. Furthermore, the majority of them receive health services for family from governmental health sector from researcher point of view this may be due to that governmental hospital which give health support considered the appropriate place for ADHD children for receive treatment and follow up and most of the services in addition to this its necessary because most of schools need documented governmental reports about the child with ADHD before enrolling to it.

Regarding total level of caregivers knowledge about ADHD pre and post implementation of psycho educational nursing program, these present result clarified that, there was a highly statistically significant improvement in all items of caregivers' knowledge about ADHD post implementation of psycho-educational nursing program than before. these results may be attributed to the effectiveness of the psycho-educational nursing program, which

trains caregivers of ADHD children with ADHD using method enhances information retention related to ADHD, making it easier to apply this knowledge in everyday care.

This result went in agreement with the study done by *Sedky et al.*, (۲۰۲۲) which entitled (Effect of Educational Program on Parents' Caring for their children with attention deficit hyperactivity disorder) revealed that more than three quarter of the studied parents had a satisfactory level in their total knowledge scores in the follow-up phase of guidelines implementation Also, it was parallel with the study conducted by *Sayed*, (۲۰۲۲) which entitled (Effect of Educational Program on Parents' Caring for their Children with Attention Deficit Hyperactivity Disorder) and revealed that there is a significant improvement in knowledge scores among more than three quarters of the studied parents following the implementation of the educational program.

Regarding the total level of burden among the studied caregivers, less than one quarter of the studied caregivers had moderate burden post program implementation. This results was in the same line with a study done by *Syed et al.*, (۲۰۲۴) who conducted a study entitled (A narrative review of the effects of psycho-education on children and adolescents with attention deficit hyperactivity disorder) and revealed that Parent psycho-education may reduce parental feeling of burden and stress. In addition , this result was parallel with a study done by *Selçuk, M.* (۲۰۲۵) who conducted a study entitled (The Impact of Attention-Deficit/Hyperactivity Disorder Treatment on Caregiver's Burden, Anxiety, and Depression Symptoms) and revealed that caregivers decrease their feeling of burden after implementation of the program.

Regarding total psychological capital level among the studied caregivers less than three quarters of the studied caregivers had high level of psychological capital post implementation of the psycho-educational

nursing program. From researcher point of view, it could be due to that caregivers participated in a psycho-educational program, resulted in gain a clearer understanding of ADHD which reducing confusion and helplessness, helps caregivers set achievable goals, boosting hope and optimism and also feeling equipped to handle challenges.

These present results were agreed with the study conducted by *Talebi, et al.*, (۲۰۱۹) which entitled (Effect of Mindfulness-Based Education on Psychological Capital of Parents of Children with Attention Deficit Hyperactivity Disorder) and revealed that significant effect of mindfulness education program on psychological capital of parents of children with ADHD. In addition to this another study come in agreement with the current results done by *Afshar et al.*, (۲۰۲۲) who conducted a study entitled (The effectiveness of stress management skills training on psychological capital, resilience and social skills in mothers with hyperactive children) and showed that the effectiveness of the program on increase psychological capital among the studied caregivers. Concerning correlations between total knowledge about ADHD and total psychological capital mean scores among the studied caregivers pre and post program implementation, the results of the current study revealed that there was highly statistically significant positive correlation between total knowledge and total psychological capital mean scores among caregivers of children with ADHD pre and post program implementation.

Before program implementation caregivers who had unsatisfactory knowledge about ADHD had moderate level of psychological capital. this could be due to caregivers had lower ADHD knowledge due to lack of education and awareness that result in have lower psychological capital because they felt less confident, hopelessness and become not emotionally prepared for caring their child. In addition to this, after program

implementation, the researcher attributes these results due to the effect of psycho-educational nursing program which focus on improve caregivers knowledge of ADHD and reduce their level of feeling of burden which result in enhance their psychological capital.

The result of this present study was in the same line with *Manwatkar*, (२०२०) who conducted a study entitled (A Comparative Study on the Effectiveness of Educational Intervention in Enhancing Knowledge, Attitude, and Practices regarding Attention-Deficit Hyperactivity Disorder among School Teachers and Parents in a Metropolitan City) and a study conducted by *Ali et al.*, (२०२ॢ) which entitled (Effectiveness of intervention guidelines on mothers of children with attention deficit hyperactivity disorders) and revealed that there was a strong positive correlations were identified among knowledge, practice and attitude scores post program implementation among parents.

Concerning correlations between total knowledge about ADHD, total burden and total psychological capital mean scores among the studied caregivers pre and post program implementation, the current study results illustrated that there is highly statistically significant negative correlation between total burden and total knowledge and total psychological capital mean scores among caregivers of children with ADHD pre and post program implementation. This results were supported by *Susmarini, & Shin*, (२०२।) who conducted a study entitled (Family resilience and caregiver's well-being across different age groups of children with ADHD in the United States) and revealed that there was highly statistical significant negative correlation among the studied variables

Finally, it can be said that implementing the psycho-educational nursing program was very effective in increasing the level of knowledge and psychological capital among

the studied caregivers and hence reduce feeling of burden among them. So, we can say that the psycho-educational nursing program had a positive effect on feeling of burden and psychological capital among caregivers of children with ADHD.

Conclusion:

Based on the results of the present study, the following conclusions were formulated:

The psycho-educational nursing program had a positive effect on feeling of burden and psychological capital level for caregivers of children with ADHD as more than three quarters of the studied caregivers had satisfactory knowledge about ADHD and less than three quarters had high psychological capital level post-program implementation than before. Also, less than one quarter of the studied caregivers had moderate burden level post-program implementation than before. Also, there was a highly statistically significant negative correlation between total burden and total knowledge and total psychological capital mean scores among caregivers of children with ADHD pre and post program implementation.

Recommendations:

Based on the findings and conclusion of this present study, the following recommendations are suggested:

- Generalization of the Psycho-educational nursing program for all caregivers of children with ADHD in all psychiatric hospitals to improve their knowledge about ADHD and hence reduce their feeling of burden.
- Establishing support services for ADHD children and their mothers such as counselling or support groups is mandatory to address the emotional and psychological challenges faced by caregivers of children with ADHD.
- Application of the study using a larger sample in different correlational setting to generalize the results.

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