

Nursing intervention for managing feeling of strain, shame and coping of Parents with ADHD Children

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Abstract: This study aimed to evaluate the effectiveness of nursing intervention on decreasing the level of shame, strain & improving the coping methods of parents with attention deficit hyperactivity disorder (ADHD) children. **Design:** A quasi-experimental (one group pre/post) design was utilized in this study. **Sample:** A purposive sample of 40 ADHD children with their parents was targeted and recruited for engaging in this study. **Setting:** The study was conducted in the Child Psychiatry Clinic at The Center of Social and Preventive Medicine, Faculty of Medicine, Cairo University. **Tools of data collection:** A structured interview questionnaire. It was designed by the researchers. It included the following parts; Demographic characteristics of children such as child code number, age, gender, address, child rank, duration of illness), data related to parents included age, educational level, presence of hereditary factor, occupation and marital status. The Brief Coping Orientation to Problems Experienced, Caregiver Strain Questionnaire, Parental Shame Scale. **Results:** There were highly statistical significant differences between mean scores of pre-post intervention regarding all studied variables related to knowledge, feeling of shame, strain and coping. In relation to pre/post intervention, there was a statistical significant correlation between parents' knowledge and coping in post intervention and feeling of shame in pre intervention. Also, there was statistical significant correlation between strain and coping pre intervention and strain pre/post intervention. While, there was no statistical significant correlation between other variables. **Conclusion:** Nursing intervention was effective in improving parents' methods of coping, feeling of shame and strain. **Recommendation:** The application of this research will be of interest to education authorities, especially those concerned in bridging the gap between home and school to help young people with ADHD.

Keywords: Nursing intervention, Feeling of shame, Strain, Coping, Parents with ADHD Children.

1. INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) "is the most commonly diagnosed behavioral disorder of childhood. Its core symptoms include developmentally inappropriate level of inattention, hyperactivity and impulsivity". Children with ADHD usually have functional impairment across multiple setting including home, schools and peer relationship. It has also been shown to have long term adverse effect on academic performance, vocational success and socio-emotional development. (ADHD) is a neuro-developmental disorder with core symptoms of hyperactivity, impulsivity, and/or inattention and frequently includes executive functioning impairments. Children with ADHD experience attention and behavior challenges at school, leading to poor academic outcomes with higher rates of physical and verbal aggression, seeking attention from the teacher and non-compliance than their comparison peers. Children with ADHD are 3 to 7 times more likely to use special education services, to be expelled or suspended, or to repeat a grade than children without ADHD (Steiner, Frenette, Rene, Brennan & Perrin, 2014).

“It is a condition characterized by inattention, impulsivity, and hyperactivity. Symptoms typically experienced are forgetfulness, problems paying attention, blurting out answers before a question is completed, acting as if “driven by a motor,” impulsive behavior, and talking excessively”. ADHD can profoundly affect academic achievement, social skills, difficult child-parent relationship and the well-being of the entire family and is characterized by constant inattention, impulsivity and over activity (**American Academy of Pediatrics, 2011**).

The parents who have a child with behavioral problems predicted 57% of the parenting stress (**Solem, Christophersen&Martinussen, 2011**). The child with mental issues is continuously upsetting for their guardians who are taking care of them, indeed when the child may be a developed up individual, which would cause a steady contradiction of guardians with their child's inability (**Kling, Seltzer, Ryff&Seltzer, Greenberg, Floyd, et al., 1997**). These parents, other than bearing economic burdens, are continuously confronting passionate burdens such as feeling disgraced or feeling blameworthy(**Seltzer, Greenberg, Floyd, Pettee, Hong & Clark, et al., 2001**).

“Parenting children with ADHD is challenging and has been extensively researched for many years. Earlier research tended to focus on diagnosis and treatment, and for a long time, ignored the important issue of support for families. Gradually, as studies increasingly showed parents have the most influence over children with ADHD, particularly in the early years, and also experience severe stress, more recent research has investigated the various interventions available to families living with ADHD. This research has shown that behavioral parenting interventions may be effective for ADHD symptoms” (**Sonuga-Barke, et al., 2013**). “It is broadly recognized that broken child rearing can affect contrarily on the social working of a child with ADHD”(Modesto-Lowe, Danforth& Brooks, 2008) and therefore, interventions to assist parents are of increasing significance for managing symptom control.

Furthermore, **Johnston and Mash (2001)** “reported predominance negative influences in cases where other comorbid issues exist, such as Oppositional Conduct Disorder, recommending this takes place due to an increased seriousness of ADHD symptomatology”. Parental stress shows up to be connected to characteristics of the ADHD child and the seriousness of the indications is connected to parental stress (**Theule et al., 2013**). Families of children with ADHD are at increased risk due to problems including psychological and physical problems in other family members, family stress and increased marital conflict and divorce rates for parents of children with ADHD (**Wymbs, et al., 2015**)

Research studies indicated that “mother and father experienced a broad range of poor physical, psychological and social outcomes in caring for a child with special disabilities”(Crnic, et al., 2005; Rayner&Moore, 2007). Psychological effects mainly include worry, anxiety and depression (**Phetrasuwan& Miles, 2009**), reduced self-esteem (**Hill & Rose, 2009**), emotional pain, frustration and feelings of guilt (**Saloviita, Italinna&Leinonen, 2003**). In this respect, self-blame can appear in many forms including enabling, dramatic pleas for change, threatening, blaming the child for your distress "How could you do this to me," withdrawing, raging, anxiety hovering or even quitting as a parent. Guilt can linger and follow us long after children are out of the nest.

Research indicates that parents of teenagers with ADHD suffer from excessive stages of stress(**Theule, Wiener, Tannock& Jenkins, 2013**). Self-efficacy and depression have been distinguished as two viewpoints which can altogether affect child rearing (**Kaiser, Hinshaw&Piffner, 2010**), whereas other child rearing characteristics, such as warmth and sympathy lead to improved results for children with ADHD (**Modesto-Lowe, Chaplin, Godsay&Soovajjan, 2014**). Since health influences significantly on parenting skills, improving parental well-being is of paramount importance. Furthermore, “shame is an emotion that plays a big part in the lives of parents with ADHD”. When you feel shame, you feel a huge sense of embarrassment and humiliation about who you are. Shame and guilt are closely connected; although subtly different. Feeling ashamed can lead to many problems, including depression anxiety, drug and alcohol problems.(**Jennifer, Baxter, 2013**).

Parents practice different adapting techniques in reaction to stress. “Adapting methodologies can be considered versatile or maladaptive(that is, healthy or unhealthy”(Friedman & Billick, 2015). Patnaik, (2014) showed examples of coping strategies generally considered to be maladaptive included “self-blame, substance abuse, avoidance, and denial. These maladaptive adapting methodologies can unfavorably influence both parent and child and have been appeared to extend feelings of sadness within the parent”. In expansion, they incredibly increment the chances of child neglect(Friedman & Billick, 2015). The increased and extra continual the stress a family experiences, the greater in all likelihood it is that its individuals will engage in maladaptive coping techniques (**Brooks-Gunn, Schneider & Waldfoegel, 2013**).

“Coping strategies associated with reduced stress for parents are organized into two categories: primary control coping and secondary control coping. Primary control coping includes intentional efforts to manage a stressful situation efforts such as problem solving, taking a deep breath, and managing difficult emotions, i.e., emotional regulation. Parents who use problem-solving skills experience less parental stress” (Bushman & Peacock, 2010). “Secondary control coping involves adapting oneself to a stressful situation through means such as acceptance, cognitive restructuring, and positive thinking” (Sarah Cronin, et al., 2014).

The psychiatric nurse can help the young people in stimulating their connections with others within the family unit by instructing the child social aptitudes and how to communicate way better with other family individuals. She besides ought to assign certain arrangements for the child and family to address trouble issues and survey how the individuals connected with each other (Jennifer, et al., 2015). Also, she can then train the family on how to better exchange their needs with every member and the importance of hobbies and agency in the household unit when there is a child with ADHD (Jennifer, Baxter & May, 2013). In relation to parent's feeling of burden & coping strategy with ADHD, the psychiatric nurse viewpoint differs from that of a psychiatrist, social worker, or counselor, in that it views the entire affected family. Through an advanced psychiatric nursing view it takes all psychosocial aspects into account (Woodman, 2014).

Significance of the study

The prevalence of ADHD in the United States, about 11% of children aged 4 to 17 years (6.4 million) were diagnosed with ADHD in 2011 (Visser, et al., 2014). In recent years, the prevalence of this disease has drastically expanded amongst school aged children. “According to the Centre for Disease Control and prevention (2017) the prevalence of ADHD among children between the ages of 4 and 17 has repeatedly risen, from 7.8% in 2003 to 9.5% in 2007 and to 11% between 2011 and 2012” (Alsalamah, 2018). “In Egypt, incidence ranged from 6.5% among school children in grades 3-5 aged 8-10 years to 7.5% among children aged 4-12 years. The incidence of ADHD based on DSM-V among children aged 6-14 years in Fayoum City, Egypt reached 25%. In western countries, the prevalence ranged from 7.3% in Italy to 10.6% in France and the United State of America” (Aboul-ata & Amin, 2018).

Research evidences declared the importance of research in child psychiatry and the affected family, and emphasized the psychological needs for parents with ADHD child in general and specific. In Egyptian society, parents are the first line of care to their children, so this results consequently made it crucial for nurses in different practical setting (hospital or school nurse) should able to raise the parents awareness of the effective coping strategies, how to appraise their stressful situation for the best management of their ADHD child, and avoiding negative consequence on the child as well as the parent. Also, the importance of the coping that parents lack of knowledge about their child's deficit and their reliance on usual parenting techniques may result in an inappropriate parent-child interaction.

In Egypt, research in ADHD children and their parents is relatively scanty. Currently there are not enough studies that look at the impact of nursing program on enhancement parent competencies to cope with and manage the issues associated with childhood behavioral problems, This study is significant in several ways and important contribution that provide new knowledge and important skills of nursing practice, that basis for psychiatric mental health nurse, education and future research. Moreover, research shows that ADHD can severely has an effect on the lifestyles of the child and their family”.

Aim of the study

The aim of this study was to evaluate the effectiveness of nursing intervention on decreasing the level of shame, strain & improving the coping methods among parents with ADHD children.

Research Hypothesis

H1. Parents with ADHD children who are subjected to nursing intervention program will get higher scores in coping strategies than before program implementation.

H2. Parents with ADHD children who are subjected to nursing intervention program will get higher scores in knowledge than before program implementation.

H3.Parents with ADHD children who are subjected to nursing intervention program will get lower scores in feeling of shame than before program implementation.

H4.Parents with ADHD children who are subjected to nursing intervention program will get lower scores in feeling of strain than before program implementation.

2. SUBJECTS AND METHODS

Research design

A quasi-experimental (one group pre /post design) was used in the current study.

Sample

A purposive sample of forty ADHD children with their parents was targeted and recruited for conducting this study.The current sample was calculated using G-power analysis version 3.1.1, where the Power of .95 ($\beta = 1-.95 = .05$) at alpha .05 (one-sided) was used as the significance level, and effect size= (0.5) was utilized.

Inclusion Criteria

- Both genders
- Children accompanied by their parents
- Free from other co-morbidity
- The child or parents accept to participate in the study
- Diagnosed with ADHD by psychiatrist
- Their parents can read and write

Exclusion Criteria

- Children who were diagnosed with (mental retardation, autistic disorder&conduct disorder) would be excluded from the study.

Setting

The study was carried out at the child psychiatry clinic at the Center of Social and Preventive Medicine, Faculty of Medicine, Cairo University.This clinic is one of the pediatric clinics which consisted of five rooms for the purpose of diagnosis. A waiting area for the parents is attached with this clinic.

Tools of Data Collection

The following tools were used for collecting data:

1-A structured interview questionnaire :It was designed by the researchers and written in Arabic language based on pertinent literature. It included the following parts; demographic characteristics of children such as child code number, age, gender, address, child rank ,duration of illness) data related to parents included age, educational level, presence of hereditary factor, occupation and marital status .

2-The Brief Coping Orientation to Problems Experienced Scale COPE: Developed by Carver, Scheier& Weintraub(1989).“It contained 28 items that presents a coping thought or action that individuals may adopt under stress or in difficult situations. For each item, respondents indicated whether they have used the coping response on a four-point Likert scale (1 = I haven't been doing this at all; 2 = I've been doing this a little bit; 3 = I've been doing this a medium amount; 4 = I've been doing this a lot). The items of the original version of the Brief COPE were in a format that was situational and retrospective, allowing for the assessment of situational coping responses to specific stressors. The Brief COPE asks participants to bring to mind a relevant stressor they encountered in the recent past and to indicate how they coped with it .Total score of the Brief COPE was ranged from (1-112) low level ranged from (1-38), moderate level ranged from (39-75) , high level ranged from (76-112)”.

3- Caregiver Strain Questionnaire (CGSQ): Developed by **Brannan, Heflinger & Bickman (1997)**: “It was designed to measure stress associated with caregivers of children with ADHD. It was composed of 21-items that assess three different dimensions of caregiver strain: (1) objective strain, (2) internalized subjective strain, and (3) externalized subjective strain”. The subscale scores for the CGSQ are calculated as follow. Objective strain items from (1-11), Subjective externalized strain item (13, 14)(reverse coded), 15, 19 and Subjective internalized strain - items (12, 16, 17, 18, 20, 21). “Each item in the instrument was measured on a five-point Likert scale, with end points of ‘not at all a problem’ to ‘very much a problem’. A higher score indicates greater caregiver strain. The 21-item CGSQ scale had internal consistency reliability (Cronbach’s alpha) of 0.94. Cronbach’s alpha values were 0.93, 0.75, and 0.82 for objective strain, subjective externalized strain, and subjective internalized strain, respectively”.

4- Parental Shame Scale: Originally developed by **Lau (2004)**, it was designed to measure “the shame that a parent experiences about his/her own child’s externalizing behaviors”. “It consisted of 17 items; each item was rated on a 5-point Likert scale 1= strongly disagree, 2= disagree, 3 =not sure, 4= agree, and 5= strongly agree”. “The subject was considered to have a high shame feeling if the percent score was 60% or more and low if less than 60%”.

Content Validity

Tools were translated by the researchers who used and observed the back translation system for verifying the translation of the tools (1) The researchers translated the instruments (English formats) into Arabic language (2) rendered the identical English formats to bilingual professionals for verification of the translation of the Arabic formats. (3) The resulting variations have been translated back into the original language through other bilingual professionals who had been blind to the original, (4) and minor discrepancies in the content material have been established and vital changes were done. Content validity was once carried out to identify the degree to which the tools measure what used to be supposed to be measured. The translated tools had been examined by using a panel of five specialists in the field of psychiatry and they agreed that it is valid and applicable with the purpose of the study.

Procedure

After an official permission was obtained from the center of social and preventive medicine, Pediatric Hospital, Cairo University, “the researchers interviewed all participants before they enter the program. The purpose of the study was explained and oral approval was obtained, then written consent was received immediately before filling the tools. The researchers used semi-structured interview to complete the tools for assessment, this interview lasted for about 30-45 minutes. These tools were kept anonymously by using code number. The purpose of the study was explained for the participants to gain their support and corporation. Fixed time and room were determined for program sessions”. The researchers were available, two days/week from 10Am:2Pm. The study was conducted over a period of six months extended from July till December 2018.

Pilot Study

A pilot study was conducted on (10%) of the total subjects to check feasibility, objectivity, applicability and clarity of items and estimated the time needed to complete the tool according to the needed explanation. Results of the pilot study illustrated that no modifications were needed, so the subjects were included to the actual study sample.

Ethical Consideration

An official permission was obtained from the director of the out-patient clinic of child psychiatry at the Center of Social and Preventive Medicine, Faculty of Medicine, Cairo University to conduct the study. “A meeting was scheduled with the director of out-patient clinic to present the research project. Once all necessary consents were granted, a date was chosen to conduct the study according to the available time of children and their parents. A detailed description about the study, procedure and questionnaire was given to the parents. Study participants had been informed that they have the right to refrain from collaborating in the study at any time besides experiencing any bad consequences. Informed consents have been obtained from all eligible members who agreed to take part in the study. Data confidentiality and patient’s privacy had been secured. Code numbers were created and kept by the researchers to keep patients’ anonymity”.

Program Objectives:

- Improve parents' knowledge for ADHD children
- Reduce strains exhibited by parents having children with ADHD by changing their negative attitude with more positive one.
- Provide parents with ways of expression and emotional control, where they are able to express their emotions through sadness, joy, anger and violence.
- Release negative emotions, where the environment of correct thinking is the best way to launch the suppression and internal conflict.
- Encourage social interaction (socialization) which play a role in social maturity, and learn how to deal with problem.
- Use problem solving skills, where the mothers help in finding solutions that can take advantage of them outside the session.

Description of the nursing intervention

The intervention was designed to develop coping strategies and alleviate the feeling of shame and strain. Structured nursing interventions strategies used to be developed through the researchers primarily based on related review of literature .Content validity of the program was reviewed by three experts in psychiatric mental health field. The program was held on 12sessions, twice weekly, each session lasted (60- 90) minutes; each skill took from one to two sessions to be taught and reviewed for participants. The program was conducted through three phases:

I-Assessment phase (two sessions): This phase was aiming to identify the participants' needs and to have base line assessment. Based on the assessment phase, "the program content, tools and media (brochures, booklets, and audiovisual materials) were prepared by the researchers. This program content was revised by a group of experts for content validity and relevancy. Based on the opinion of the expertise and the results of the pilot study, some modifications were done to ensure clarity of the tools and feasibility of the content".

Assessment was done for participants' knowledge about the condition of their children and their levels of strain and shame. This assessment was completed through parents' interview, revision records, with the help of a psychiatrist and questions were asked about socio-demographic characteristics such as age, level of education, occupation,...etc., This assessment was done with each participant individually before beginning of the intervention.

II-Implementation phase (eight sessions):In this phase implementation of the program started by dividing the group into smaller subgroups (4-6) participants in each subgroup, meetings were held continuously in a specified time and place which was prepared for the interaction. A booklet containing the component of the sessions based on literature review and the results of the pre-test evaluation was prepared in Arabic language and was supplemented by photos and illustration. An educational program was carried out for study subjects in educational room in outpatient clinic, at the child psychiatry clinic at the Center of Social and Preventive Medicine, Faculty of Medicine, Cairo University. New skills were learnt through guidance. Role plays, and learning methods were used to reduce the chance of forgetting and to aid in better and smoother performance. This phase include

Two sessions: For orienting parents to ADHD, getting information about disease causes, signs, symptoms, types, classification, different methods for treatment; discussing their previous experiences in dealing with its symptoms, then getting general instructions about symptoms management like; paying close attention to/ monitoring symptoms, asking about progress from time to time. The teaching strategies used during the session were power point presentation and group discussion, and self- help booklets were given in the last session as reminders.

Two sessions: For discussing with parents psychological stress and its negative effect; irrational ideas that cause psychological stress and ways to overcome it; apply with parents one of stress management techniques (e.g. breathing exercise, progressive muscle relaxation) by demonstration and re demonstration.

Two sessions: For orienting parents to different coping methods used with ADHD children; and teaching interaction skills through positive reinforcement and token economies. In addition, revising with them the content of the previous sessions, principles and skills, with global feedback on their homework assignments and sharing.

Two sessions: For providing advices for parents how to deal with ADHD children; development of scientific problem solving approach in different position and training of relaxation techniques.

During the session ,parents were encouraged to ask questions and provide feedback .Communication was kept open between the researcher and the subjects .The researchers provided active coaching during the role playing. Participants reinforced to participate in these planned activities by giving them positive feedback whenever they succeeded in these activities. The use of positive feedback helped participants in their attempt to use new skills. The participants were encouraged to offer suggestions and explore solutions to the problem raised by one another. The final 5 to 10 minutes was used to summarize and close the session. The summary had a positive focus and included what the patients had learned or gained from interaction.

III-Evaluation Phase (two sessions):This phase was carried out immediately after implementing the program. It indicated if the objectives were met or not. Positive gains were identified. Participants were evaluated by application of post test by using the same study tools as an outcome measure and comparison was done to determine the effectiveness of the program. The researchers prepared for the termination of the program and the ending relation. This preparation started from the beginning of the program to avoid any problems that could happen from ending the relation suddenly. Evaluation was continuous and regular process and based upon criteria to measure participants' performance and quality of the program.

Statistical design

Data were analyzed by using the “Statistical Package for the Social Sciences statistical software (SPSS version 20)”. Descriptive statistics were determined for each group on each measure for pre, post-tests. Paired t-test was used to assess pre- post-test data for the separate treatment group was tested for significant differences in order to determine whether or not the data could be collapsed across treatment group. Analysis of Variance (ANOVA) was used to determine the difference for variables of three categories. Pearson correlation (r) was used to assess the relationship between continuous variables. The significance level in the current study was (<0.05).

3. RESULTS

Table (1): Demographic characteristics of the studied children (n=40)

Demographic data	Categories	No	%
Child age	5-< 10 years	28	70.0
	10<15 years	12	30.0
	Mean ±SD= 9.2±1.741		
Gender	male	26	65
	female	14	35
Address	rural	18	45
	urban	22	55
Heredity	yes	32	80
	no	8	20
Duration of Illness	1-<3 years	24	60
	3-<5 year	10	25
	More than5 years	6	15

Table (1) declared that the mean age of the studied children was (mean ±SD= 9.2±1.74). According to gender, results showed that more than two thirds (65 %) of the participants were male. More than three quarters (80%) of studied children had heredity factor. In relation to duration of illness, more than (50 %) of the children spent from 1 to <3 years at the hospital.

Table (2): Demographic characteristics of the studied parents(n=40)

Categories	No	%
	Mother age	
Less than 30 year	10	25
30-<40 year	24	60
40-< 50 year	5	15
Mean ±SD= 39 ± 6.32		
Father age		
Less than 30 year	4	10
30-<40 year	22	55
40-< 50 year	14	35
Mean ±SD= 42.5 ± 6.30		
Father occupation		
Working	30	75
Not working	10	25
Mother occupation & education		
Working	7	17.5
Housewife	33	82.5
read & write	10	25
Basic education	6	15
Secondary education	10	25
University education	14	35
Father education		
Read & write	10	25
Basic education	6	15
Secondary education	10	25
University education	14	35
Marital status		
Live together	24	60
Separated - divorced	16	40
Accompanying person		
Father	16	40
mother	24	60

Table (2) indicated that the mean age of the studied mothers was (mean ±SD= 39 ± 6.32). According to occupation, results showed that three quarters (75%) of the participants were working. more than one third (35%) of studied parents had university education. In relation to marital status (60 %) of the parents were living together while (40%) of the parents were separated.

Table (3): Comparison between pre-post intervention in relation to parents' knowledge about ADHD of studied subjects (n=40)

Knowledge	Pre		Post		t-test	
	Mean	SD	Mean	SD	t	Sig.
1-Knowledge related to definition of attention deficit and hyperactivity disorder.	1.55	.50	1.15	.36	3.76	.001*
2--Knowledge related to symptoms of attention deficit and hyperactivity disorder.	1.10	.30	1.80	.41	9.54	.000*
3--Knowledge related to symptoms that are not attention deficit and hyperactivity disorder.	1.0	.00	1.05	.22	1.43	.160
4--Knowledge related to the aim of behavioral therapy.	1.25	.44	1.80	.41	5.83	.000*
5--Knowledge related to misconceptions about attention deficit and hyperactivity disorder.	1.05	.22	1.50	.51	5.65	.000*
6--Knowledge related to causes of attention deficit and hyperactivity disorder.	1.05	.22	1.65	.48	7.65	.000*

Table (3) declared statistical significant differences in relation to all items that assess the knowledge of the parents who have child with ADHD except that is related to the knowledge that are not attention deficit and hyperactivity disorder.

Table (4) Comparison between pre-post intervention as regard parents' feeling of strain(n=40):

Strain types	Pre	Post	t-test	
	Mean ±SD	Mean ±SD	t	p
Objective strain	35.75± 6.99	25.25±7.10	9.18	0.00*
Subjective externalized strain	10.3±2.20	10.45±2.41	0.31	0.76
Subjective internalized strain	21.7±5.02	12.2±3.53	13.1	0.00*

Table (4) showed that there was a statistical significant difference between mean scores of objective strain and subjective internalized strain at pre and post intervention, where pre and post intervention mean scores were(35.75± 6.99, 25.25±7.10)and (21.7±5.02, 12.2±3.53) respectively. While ,no statistical significant differences were found between mean scores of subjective externalized strain at pre and post intervention(10.3±2.20, 10.45±2.41).

Table (5) Comparison between pre-post intervention as regard parents' feeling of shameand coping methods(n=40):

Variables	Time	Low		Moderate		High		Chi square test	
		No.	%	No.	%	No.	%	χ ²	p
Feeling of shame	Pre	0	0	22	55	18	45	23.61	0.00*
	Post	10	25	28	70	2	5		
Coping	Pre	12	30	24	60	4	10	9.54	0.008*
	Post	2	5	29	72.5	9	22.5		

Table (5) clarified that, there was a highly statistical significant difference between pre-post intervention as regard to feeling of shame and coping which reduced in post program from (45 % to 5%) with highly statistical significant difference (χ²=23.61at P=0.00) for feeling of shame and increased in post program from (10% to 22.5%) with highly statistical significant difference(χ²=9.54 at P=0.008) for coping methods.

Table (6): Comparison between pre -post intervention in relation to parents' knowledge, feelings of shame, strain and coping (n=40):

Variables	Pre	Post	Paired t test	
	Mean ±SD	Mean ±SD	t	p
Knowledge	13.85± 3.01	20.25±3.45	10.205	.000*
Feeling of shame	61.65±15.84	46.18±10.16	4.846	.000*
Strain	67.75±11.95	47.90±10.2	11.775	.000*
Coping	57.80±14.26	71.30±11.47	4.976	.000*

Table (6) clarified that, there were a highly statistical significant differences between pre-post intervention regarding all studied variables related to parents' knowledge, feeling of shame, strain and coping (13.85± 3.01, 20.25±3.45) pre/post intervention for ADHD knowledge, (67.75±11.95, 46.18±10.16) pre/post intervention for shame feeling and (67.75±11.95, 47.90±10.2) pre/post intervention for strain (57.80±14.26, 71.30±11.47) pre/post intervention for coping

Table (7) Comparison between pre-post intervention regarding socio-demographic characteristics of children with ADHD and the other studied variables (n=40)

Child Characteristics	Shame				strain				Coping				Knowledge			
	Pre		Post		Pre		Post		Pre		Post		Pre		Post	
	t	P	t	p	t	p	t	p	t	p	t	p	t	p	t	p
Child age	.25	.004*	1.23	.11	1.65	.10	1.6	.10	.39	.4	.31	.2	1.87	.28	.39	.02*
Heredity	1.07	.00*	1.19	.85	.93	.57	.12	.14	1.36	.2	1.45	.5	.95	.63	1.4	.85
Duration of illness	1.9	.16	5.13	.01*	1.83	.17	.83	.44	.13	.9	.03	.97	3.51	.04*	4.34	.02*
Child order	2.04	.85	1.41	.71	1.07	.09	.87	.02*	.20	.6	.32	.009*	1.83	.006*	.70	.9
Family size	1.29	.29	4.96	.01*	4.23	.02*	1.26	.30	1.004	.4	6.46	.004*	2.28	.12	1.03	.37

Table (7) showed that, there were statistical significant differences between child age and shame pre-intervention at (t= .25; p= .004) and child age and parents knowledge post intervention at (t= .39; p= .02).Also, there was statistical significant difference between heredity and shame pre-intervention at (t= 1.07; p= .00). Findings also showed a statistical significant difference between duration of illness and shame post-intervention at (t= 5.13; p= .01). In relation to child order, a statistical significant difference was found between child order and strain post-intervention at (t= .87; p= .02), coping post-intervention at (t= .32; p= .009) and parents’ knowledge pre-intervention at (t= 1.83; p= .006). Also, there was statistical significant difference between family size and strain pre-intervention at (t= 4.23; p= .02) and coping post intervention at (6.46; p= .004).

Table (8) Comparison between pre-post intervention regarding socio-demographic characteristics of parents and other studied variables (n=40)

Parent Characteristics	Shame				strain				Coping				Knowledge			
	Pre		Post		pre		Post		Pre		Post		pre		Post	
	t	P	t	p	t	p	t	p	t	p	t	p	t	p	t	p
Level of education	1.18	.034	.88	.49	2.08	.11	.06	.99	.99	.43	1.02	.41	5.75	.001*	2.04	.11
Marital status	.86	.82	.61	.07	.75	.01*	.05	.29	.93	.79	.13	.76	.38	.12	1.32	.71
Father occupation	1.03	.68	.73	.02*	.98	.02	1.49	.91	.08	.001*	3.32	.42	2.59	.006*	2.69	.02*
Mother age	4.87	.01*	.11	.9	7.50	.002*	1.28	.29	4.11	.02*	2.7	.08	3.81	.03*	2.7	.08

As shown in the above table statistical significant differences were found between parents’ knowledge & level of education at pre intervention at(t=5.75; p=.001) and strain feeling, marital status pre intervention at (t=.75; p=.01).While ,a statistical significant difference was found between father occupation ,shame feeling and parents knowledge post intervention at (t=.73; p=.02),(t=2.69; p=.02).Also, statistical significant differences was found between mother age, shame feeling, strain feeling and coping pre intervention at (t=4.87; p=.01), (t=7.50; p=.002)and (t=4.11; p=.02) (Table, 8).

Table (9): Correlation matrix among parents’ knowledge, feeling of shame, strain and coping pre-post intervention (n=40):

		Knowledge	Shame	Strain	Coping	Knowledge	Shame	Strain
Shame pre	r	.291						
	p	.069						
Strain pre	r	.092	.212					
	p	.574	.190					
Coping pre	r	.018	.110	.316*				
	p	.910	.501	.047				
Knowledge post	r	.251	.375*	.065	.086			
	p	.118	.017	.690	.600			
Shame post	r	.164	.168	.048	.234	.012		
	p	.310	.301	.769	.146	.940		
Strain post	r	.263	.251	.546**	.094	.112	.230	
	p	.101	.119	.000	.566	.493	.153	
Copingpost	r	.030	.596**	.121	.124	.431**	.145	.098
	p	.855	.000	.458	.446	.005	.371	.548

Table (9) clarified that there was a statistical significant correlation between parents ’knowledge and coping in post intervention and feeling of shame in pre intervention at(r=.431, P=.005); (r=.291,P=.069). Also, there was a statistical significant correlation between strain and coping pre intervention at(r=.316,P=.047) and strain pre post intervention at (r=.546, P=.000). While, there was no statistical significant correlation between other variables.

4. DISCUSSION

The aim of this study was to evaluate the effectiveness of nursing intervention for improving the level of shame, strain & coping methods among parents with ADHD children. “The results of this study demonstrated that the intervention can profit parents, and combined with knowledge of ADHD symptomology; convey positive outcomes for parents of children with ADHD. Rather than dealing completely with the symptomology of ADHD in children, interventions which address support for parents have been established as an important reinforcement for treatment. Conversely, if the parent-child relationship is not high functioning, a child’s psychological development may be negatively impacted”. Interventions that improve and enhance outcomes for parent-child relationships are therefore vital.

Concerning child’s parent socio-demographic characteristics, nearly two thirds of the ADHD children were boys ,while one third of the sample was girls. It might be because of the biological make-up of the female does not give obvious problematic consequences as a male. The findings were in agreement with Alkot,(2014) who indicated that, the prevalence of ADHD among basic school children in Menoufia governorate was 6.9%. There was a higher prevalence of ADHD in male than female children with a male to female ratio of nearly 3.5: 1. Also, this result matched with **Jennifer & Baxter (2013)** who confirmed that the lower diagnosis rate among females in childhood could be because of girls with ADHD were more likely than boys to have the inattentive form of ADHD, and less likely to show obvious problems. In relation to their age more than two thirds of them(70%) their age was ranged from (5-< 10) years.

The study findings were in agreement with **Visser, Blumberg, Danielson, Bitsko & Kogan (2013)** who highlighted that (7.8%) and (9.5%) of US ADHD children ages range from 4 to 17 years. This was also in agreement with **Mohamed (2013)** and The American Psychiatric Association’s Diagnostic and Statistical Manual, Fifth edition **APA DSM-5, (2013)** who reported that the child age ranges from 6 to 12 years, and **Osman (2009)** showed that the age starts from 7 or 8 years .Furthermore, study findings conducted by **Gama, Mohamed, Mohamed&Emad,(2010)** indicated the prevalence of ADHD increased with increasing age (7.7 % in 4- to 10-year-old, 14.3 % between 11- to 14 year-olds). Population studies identify that, childhood inattention and hyperactivity are more common in families with low parent educational level and low family income.

The variation of the child’s age of ADHD ranged from(5-< 10) might indicate many things. One of which is that the advanced psychiatric medical care helps with the early diagnosis and discovering of the ADHD. This will be beneficial in both early diagnosis and better prognosis. Also, parents' awareness played a great role in asking for help in early child age. Therefore, the finding of the child variation of age was a positive support of the current study.

In addition, results indicated that the mean age of the mothers with ADHD children was 39 years old. On contrary, **Chang, et al., (2014)** declared that women who give birth at younger ages (e.g. teenage mothers) are more likely to have children who exhibit behavior problems, such as attention-deficit/ hyperactivity disorder (ADHD). However, it is not clear whether young maternal age is causally associated with poor offspring outcomes or confounded by familial factors.

In relation to heredity factor the study finding showed that, the number of the parents who have ADHD children dwelling in urban areas used to be greater than these who live in rural areas. This might be due to the lack of available services, lack of awareness, and the cost of reaching to a specialist in the urban areas makes it difficult for them to ask for management of their children. Also, it might be because of the out-side space for the children activities and working with their parent in the field hide the ADHD symptoms and make it difficult for their parent to identify the disorder. The current study result matched also with **Mohamed (2013)** who reported that parents of ADHD children in “urban” areas were more than parents who live in rural areas. This finding was in contrast with **Nathaniel, et al., (2013)** who found that “rural” children were as likely as urban children to have an (ADHD) diagnosis and less likely to have any other type of psychiatric diagnosis. Initially, observed higher prevalence of mental health diagnoses among rural children which was referred to underlying differences in demographic characteristics.

Also findings of this study declared that more than three quarters of study subjects (80%) had a heredity factor. Family and twin studies of ADHD demonstrated a high heritability, estimated to be around 70–80% of twin studies (**Faraone, et al., 2005; Burt, 2019**). Relatively few studies have investigated the genetic and environmental contributions to the developmental course and outcomes in adulthood. Longitudinal twin studies showed that the continuity of symptoms from childhood through to adolescence is predominantly due to common genetic influences (**Larsson, et al., 2004; Van den Berg, et al., 2006**).

According to parents feeling of shame and coping results revealed that, there was a highly statistical significant difference between pre-post intervention as regard to feeling of shame and coping which reduced in post intervention from (45 % to 5%) for shame feeling and increased in post intervention from (10% to 22.5%) for coping. Similar study by **Woodman, (2014)** found that, parents, and family members, of children with behavioral problems experience challenges that differ from those experienced by parents of typically developing children When a child with one or more disabilities is born into a family or when parents receive the diagnosis of their child's disability, they often experience a range of emotions (e.g., shock, grief, anger) that are somewhat similar to those experienced upon learning about the death of a loved one. In addition, "a study by **American Academy of Pediatrics,(2011)** reported that, when parents feel guilty or excessively bad for children, it's harder to set limits, be truthful and direct and challenge kids within their zone of capability".

In accordance, with the present findings, **Kottman et al., (1995)** "reported that" "caregivers of children diagnosed with ADHD experience burdens such as worrying about the child's future. Approximately 88% of mothers of children with clinically diagnosed ADHD worry about their children's behavior at school, their self-esteem, social skills and ability to adapt to life in the future". **Feizi et al.,(2014)** added that, parent of disabled children experience stress-related to the child's behavioral difficulties, anxiety about the future, and feeling of loss for the hopes they had for their children. These feelings may be related to the loss of the imagined healthy child that they dreamed of comparison with other children in the same age groups. Additionally, "shame and fear of failure are mirrored back and forth between parents and kids, creating a vicious cycle which contaminates motivation and achievement"(**Chen, et al.,2011**).

The results of the current study showed that there was a statistical significant difference between mean scores of objective strain and subjective internalized strain at pre and post intervention, while there was no statistical significant difference between pre-post interventions in relation to the subjective externalized strain at pre and post intervention, while there was no statistical significant difference between pre-post interventions in relation to subjective externalized strain variable. **Huang, et al., (2005)** commented that "caring for children with serious emotional and behavioral difficulties can impact objective strain, and subjective internalized and externalized strain. Research on the impact of caring for children with emotional and behavioral difficulties clearly demonstrated that these parents are taking on an enormous amount of responsibility (e.g., coordinating care, increased supervision) and making life changing choices (e.g., quitting a job) in order to meet their child's needs".

Several researchers have observed that child signs and symptoms in both externalizing and internalizing domains anticipated caregiver strain, but to specific degrees. In the same line, **Bussing, et al., (2003a)** found that "having a child with externalizing symptoms (e.g., oppositional deviant disorder) predicted a higher level of caregiver strain in both the subjective and objective dimensions". authors also found that "more child internalizing symptoms (e.g., inattention or depression) predicted both objective strain and subjective internalized strain (e.g., feelings of worry about the child) for the parents". On the other hand, Bussing and colleagues found that "higher symptoms of anxiety were related to lower parental levels of subjective internalized strain". **Bussing et al., (2003b)** also studied "social networks, caregiver strain, and mental health utilization among youth at risk for Attention Deficit Hyperactivity Disorder (ADHD) and found important relationships between child symptoms and caregiver strain in three dimensions".

According to the level of stress experienced by parents with ADHD children, **Caicedo (2014)** was in agreement with the present study and reported "that mother and father with different desires young people had been physically worn-out when they woke up often at night time to do the things they liked to do, and had little energy for chores or social activities". Congruent with the present findings **Posner et al., (2007)** stated that children with ADHD engage in dangerous behaviors such as falling off the furniture after climbing, standing up in cars and strollers, drinking poison and falling or jumping out of windows. Such security risks require a high level of supervision from parents and likely contribute to increase parental and teacher stress.

Furthermore , **Firmin and Philips (2009)** found that mothers of children with ADHD experienced morning, afternoons and bed time physical difficulties. The morning routine adds pressure on mothers in terms of managing the time before the child leaving home and making it in time for school. After school, homework time has also been listed as challenging to mothers because the children are likely to be tired and more distracted, while bedtime was another difficult time where mothers' fatigue contributed to less patience in dealing with the child, especially when trying to calm them down. From

the researchers' point of view "mothers may be afraid of their child hyperactivity and impulsivity. The nature of ADHD symptoms requires that the child receives more attention to avoid harming self. The child also cannot complete anything without help from the mother who experiences a load".

Moreover, findings of **Wiener et al., (2016)**, parents of ADHD children had high levels of stress and were more prone than other parents to feel social isolation, incompetence, and unsatisfying and conflicting relationships with their spouses/partners. "Research has consistently indicated that parents and other family members who are taking care of a child with physical/intellectual disabilities often experience higher levels of stress than those with normally developing children (**Crnic, Gaze & Hoffman, 2005**). **Rayner and Moore (2007)** suggested that mothers and fathers experienced similar levels of stress and poor social life in caring for a disabled child because of the high demands for caregiving and inadequate social support obtained from family members and health professionals".

The supportive nursing interventions helped to alleviate some of the strains and the load on the parents of those children. Thus, in the same context, **Vaughan, et al., (2013)** reported that "caregivers caring for a child with symptoms in both internalizing and externalizing domains would receive services specifically designed to reduce caregiver strain and parenting stress". Examples of potential services could include respite care and support services to diminish the strain on a parent's time and financial resources. Parenting interventions designed to help parents cope with the demands of special needs children & could also be beneficial to parents' time and economic resources. Finally, parents can also want to be linked to services to help them manage their personal mental health needs.

In relation to coping, **Abery, (2006)**, found that "when families with children with disabilities form successful formal support relationships such as professional assistance whose effect help reach positive families change". In the same context, **Terhune, (2005)** reported "that families with children with disabilities involved natural support systems in assisting with children disability become more well-adjusted and adaptable. **Shannon, (2004)** was incongruent with the present result and revealed that "families with children with disabilities often feel the interactions they have with the intervention of professionals are inadequate". From the researchers' point of view, professionals may have the feeling of empathy toward the child's condition and blame parents for their children disability which further contributes to parental feelings of isolation and feelings of being misunderstood.

Moreover, findings of the study revealed that, the intervention was effective in improving parents of ADHD coping, feeling of shame and strain mean score. Other studies went in the same line with the current study results by **Mikami and colleagues (2010)**. Bottom of Form in a randomized controlled study provided the parental friendship coaching intervention to parents to teach them strategies they could use to promote the social skills and peer relationships of their children with ADHD ages (6-10). The intervention resulted in parents' greater provision of corrective feedback and reduced criticism, and improvement in children's social skills based on parent but not teacher reports.

In this respect, **Corcoran, Schildt, Hochbrueckner & Abell (2016)** indicated that "parental interventions are essential for improving outcomes". "A meta-analysis by Corcoran and colleagues reviewed parents' perceptions of living with children diagnosed with ADHD and highlighted a need to substantiate parental stress and difficulties associated with behavioral management strategies. The study exposed a requirement for connecting parents with support to promote positive outcomes for their children, and signaled a demand for evidence based interventions. Therefore, the outcomes of this research will be of interest to education authorities, particularly those involved in bridging the gap between home and school support for children with ADHD".

Regarding the impact of intervention on parents with ADHD children, a study done by **Corkum, Rimer & Schachar (1999)** found that a form of educational/behavioral intervention is suitable to rectify stress of mothers with ADHD children. According to the outcomes of the study, such programs may heighten the feeling of competency and couple's unity for bringing up the child. In fact, the presence of the trainer acts as a catalyst and yields in the therapeutic alliance so that participants get aid from his/her profession. **Anastopoulos, Shelton, DuPaul & Guevremont (1993)** indicated that behavioral education would be effective to improve parent-child interactions, elevating parental self-esteem, and decreasing parental stress. According to the researchers' view point, mothers may learn a lot of things from each other to handle their distress. Furthermore, the most important advantage of such psycho educational groups is its internal

dynamics (i.e., self-disclosure and feedback) which force participants involve in team work; the process of reciprocal and interaction, relationships among subjects leads to something like catharsis about their same concerns about child rearing. This would help participants cope better with the problems.

In relation to parents' knowledge, there was an improvement in parents' knowledge regarding ADHD pre and post intervention mean scores. Previous studies that were at the same line with the current study results by **Biederman et al., (1996)** found that parents of children with ADHD have many difficulties about management including lack of access or adherence to continued follow up care and use of ineffective treatments or interventions. Lack of doctors' and nurses' interest in giving information and reassurance to mothers about their child's status was perceived as sometimes management-related stress by nearly half of the mothers. **Beckman (1991)** was in agreement with the present finding and found that mothers of children with ADHD reported a higher level of parenting stress when health care professionals did not support them in their request for knowledge and how to provide the required care for their children.

In the same line, **Jones (2013)** added that parents had difficulties in obtaining diagnosis or gaining accessible and understandable information about their child's disability by doctors and nurses. Parents also reported challenges in obtaining consensus from professionals about future services and appropriate supports. In this respect, **Ghanizadeh & Zarei (2010)** agreed with study results which indicated that parents were in direct connection with educational and behavioral matters of children, they are required to obtain full knowledge about it. This empowers them to detect children with ADHD, refer them to a physician and appropriately manage them. Therefore, training parents more in this area is of prime importance. In this context, the importance of informing parents about the symptoms, etiology, prognosis and treatment of ADHD, increasing their knowledge and correcting their myths decrease treatment resistance, leading to ADHD prognosis improvement and complications decrease

As regards correlations among the studied variables, the current study findings indicated that, both coping and feeling of shame had a statistical significant relationship with parents' knowledge in pre and post assessment. Also, a statistical significant correlation was found between shame feeling, coping and strain.

Previous studies that were at the same line with the current study findings (**Jennifer, Baxter, 2013**) said that "learn as much as you can about ADHD through support groups, books, podcasts, and blogs. This knowledge and support will help you to know it isn't just you. Other people with ADHD experience similar things. This can be very empowering to shake the shame away". Moreover, a study by **Caicedo, (2014)** found that to "counteract feelings of shame and low self-esteem, people with ADHD need support from other individuals who believe they are a good or worthwhile person. This can be a parent, older sibling and teacher".

In relation to feeling of strain and coping, **Friedman & Billick, (2014)**, found that "the greater and more chronic the stress a family experiences, the more likely it is that its members will engage in maladaptive coping strategies". **Brooks-Gunn, Schneider & Waldfoegel, (2013)**, previous studies were at the same line with study results done by **Abdel Karim, (2016)** who found that, "there was a significant negative correlation between stress and coping, meaning that the higher the stress score the lower the use of adaptive coping strategies". Similarly, **Friedman & Billick, (2014) and Hastings et al., (2005)** found that, parents practice various coping strategies in response to stress. Coping strategies can be considered adaptive or maladaptive (that is, healthy or unhealthy).

The results of this study demonstrated that "the intervention can profit parents, combined with knowledge of ADHD symptomology; convey positive outcomes for parents of children with ADHD. Rather than dealing completely with the symptomology of ADHD in children, interventions which address support for parents have been established as an important reinforcement for treatment. Conversely, if the parent-child relationship is not highly functioning, a child's psychological development may be negatively impacted. Interventions that improve and enhance outcomes for parent-child relationships are therefore vital".

5. CONCLUSION

The present study concluded that the intervention was effective in improving the parents of children with ADHD in relation to variables regarding methods of coping, feeling of shame and strain. Also, there were highly statistically significant differences between pre-post intervention regarding studied variables as parents' knowledge, feeling of shame, strain and coping. This means that the nursing intervention was effective in making significant differences in the scores of these variables.

6. RECOMMENDATIONS

Based on the findings of this study a number of recommendations for future work are delivered:

- Longitudinal evaluation would be of excellent advantage to establish whether the outcomes continue to be positive.
- A study encompassing a larger group of mixed genders would support the generalizations of this research.
- The application of this research will be of interest to education authorities, particularly those involved in bridging the gap between home and school to support children with ADHD.
- Evidence based interventions are required for joining parents to promote positive outcomes for their children.
- Provide necessary guidance for parents about ADHD and how to manage its problems.

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