

The effectiveness of Practical Guides on Burden's Coping Strategies among Caregiver of Children Undergoing Hemodialysis

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Abstract

Background: Family caregivers of children with chronic kidney disease face many challenges in managing illness. So, the burden impact on physical, emotional, spiritual and social health. The aim of this study was to determine the effect of practical guides for burden's coping strategies intervention with caregivers of chronic hemodialysis children on their burden. **Methods:** Subjects: A convenient sample comprised 50 caregivers of chronic hemodialysis children were selected, in hemodialysis units at The Menoufia University Hospital at Shebin El-kom city, Menoufia Governorate, Egypt and Tanta University Hospital at Tanta city, El-karbeia Governorate, Egypt. **Instruments:** It consisted of three tools; 1) questionnaire for socio demographic data. 2) Paediatric Renal Caregiver Burden Scale (PR-CBS). 3) Ways of coping questionnaire. All tools were used for pre-post intervention. **The results:** The study showed regarding to total burden scores, there was a highly statistically significant reduction in total burden scores after intervention (97.54 ± 13.51) compared with (120.02 ± 16.34) before intervention. Regarding total coping scores, there was highly statistically significant improvement in total coping scores after intervention (58.86 ± 6.65) compared with (51.66 ± 8.81) before intervention. **Conclusion:** the application of practical guides for burden's coping strategies intervention with caregivers of chronic hemodialysis children reduced their burden and has succeeded in achieving significant improvement in caregivers' coping strategies. **Recommendations:** implementation of practical guide for burden's coping strategies intervention for all caregivers' chronic disease patients.

Keywords: chronic kidney diseases, caregiver, burden, coping strategies.

1. Introduction

Dialysis is a lifelong treatment for end stage renal disease (ESRD) associated with physical and psychosocial challenges that affect not only the patients but also family members who care for them. Caregivers help patients at home with many daily activities, including transportation to the dialysis centers, symptom management, mobility, dressing, and preparing an appropriate renal diet [1].

End stage renal disease (ESRD) is a silent epidemic of the 21st century. Its occurrence is universal. Haemodialysis is the most common method used to treat advanced and permanent kidney failure. Haemodialysis imposes a variety of physical and psychosocial stressors that challenge not only the patients but also the care givers. An estimated 11-30 million population of the United States are suffering from Chronic Kidney Disease and undergoing Dialysis management, In India it is estimated that about 7.85 million peoples are suffering from chronic kidney disease [2]. Kidney disease was the ninth leading cause of death in the United States. The number of patients being treated for end stage renal disease (ESRD) globally was estimated to be 2,786,000 with a 6 -7% growth rate continues to increase at a significantly higher rate than the world population. Hemodialysis remained the most common treatment modality, with approximately 1,929,000 patients undergoing hemodialysis (89% of all dialysis patients) [3].

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In Egypt; ESRD is growing by 100% annually; the estimated annual incidence of ESRD is around 74 per million and the total prevalence of patients on dialysis is 264 per million, also there are 90,000 patients die each year because of kidney failure [4]. The incidence rate of end-stage renal disease (ESRD) in the United States is 11 to 14 per million population for individuals under 20 years of age [1]. End-stage renal disease incidence was age-dependent, from 13.0 per million population in 12 year-old persons to 32.6 per million population for 19 year-old persons in countries with active pediatric transplant programs [5]. However, hemodialysis is not used as the 1st therapy, as most pediatric nephrologists would choose of chronic renal replacement aim for preemptive transplants for their patients [6].

2. Literature review

An in-depth interview study with 20 parents of children across all stages of CKD, from which four major themes were identified: absorbing the clinical environment (e.g. Experiences of medical procedures), medicalising parenting (e.g. The dual roles of parenting and Caregiving), disrupting family norms (e.g. Sibling neglect, impact upon family plans) and coping strategies and support structures (e.g. Issues related to dependence on health care providers). The researcher concluded that being a parent of a child with CKD was "consistently reported as being a pervasive and profoundly negative experience" [7]. Studies employing quantitative methodologies provide more evidence of the range of difficulties experienced by this caregiver population, with findings commonly including reports of poor physical health, restlessness, helplessness, uncertainty, preoccupation with the future, concern about their child's growth and development, reduced family income, disruptions to family activities and relationships, loss of social contacts and difficulties arising from the CKD treatment regimen [8 & 9]. Some studies have documented how caregivers' responses to the needs of chronically ill family members at home have adversely affected multiple aspects of their lives, including their stress level, family relationships and social lives in general. The adverse consequences for Caregiving also include the amount of time and effort they need to provide the Caregiving recipient with psychosocial support, which includes coordination of care, illness related financial management, mobility, and household tasks [10].

The impact of providing care for patients with chronic illnesses has been studied for several diseases. Caregiving can be associated with emotional difficulties, such as depression, a variety of anxiety-related symptoms, excess medication use, a negative impact on the perception of physical health and an impaired quality of life (QoL) [11]. Importantly, exploring ways of supporting caregivers can have beneficial effects on the outcomes for both the patient and the caregiver. Identifying family caregivers and monitoring their caregiver burden early to optimize the well-being of the caregiver have been emphasized [12]. Discussing coping skills can improve caregiver QoL even in the difficult environment of end-of-life care. Psychosocial intervention can have significant, positive effects on caregiver burden and improve their satisfaction with their role [13]. Many studies have examined the stressors of patients with ESRD. Stapleton categorized stressors faced by patients with ESRD as being related to physiological need, psychological need, role disturbance, and daily activity [14]. Mok and Tam studied 50 patients with ESRD in Hong Kong to determine the stressors encountered and the coping methods used; they found fluid limitation to be the most frequently identified stressor, followed by food limitation, itching, fatigue, and cost [15]. Moreover, [16], using the Hemodialysis Stressor Scale (HSS) to assess 57 patients with ESRD in Taiwan, found the major stressors to be limitations on time and place related to employment, limitations on fluid intake, transportation difficulties, loss of bodily function, length of dialysis of treatment, and limitation physical activities [16].

[17] conducted a descriptive cross sectional study design of 30 patients admitted at Krishna hospital, Karad, India to assess the stressors and coping strategies among patients undergoing haemodialysis. The study showed that 97% patients had severe stress while 3% patients had moderate stress among patients undergoing hemodialysis. Also, the study revealed that it is seen that always 50% of patients undergoing hemodialysis adopt emotion focused and problem orientation as their coping strategies, while 90% of patient sometimes used avoidance oriented coping strategy, while the others 56% sometime use the coping strategy of seeking support and isolated thoughts. This was supported by some researches done by which they found that patients with ESRD have both psychological and physiological stressors and that they use problem-focused coping strategies more often than emotion-focused coping strategies in response to those stressors [18&19]. others have found that patients receiving HD use more evasive coping strategies [20].

Patients receiving HD use various strategies to cope with the stressors related to their disease and the treatment procedures. The kind of coping strategies they use also depends on their personal experience, social support system, individual beliefs, and availability of resources [16]. [15] reported that the most common coping methods used by patients with ESRD include "accepting the situation because very little could be done," followed by "telling oneself not to worry because everything would work out fine" and "telling oneself that the problem was really not that important [15]. In addition to identifying the coping mechanisms that patients with ESRD use when facing various stressors related to HD, research should also clarify caregiver's burden and coping strategies. Literature in this regard, particularly in patients receiving HD, is still limited and inconsistent. Therefore, it is important to understand the extent of burden experienced by patients facing various stressors related to HD and the impact of coping strategies on caregiver's burden.

3. Subjects and Methods

3.1. The Aim of the Study

The aim of the study is to evaluate the effect of practical guide on burden's coping strategies among caregiver of children undergoing hemodialysis.

3.2. Research Hypothesis

Application of practical guides for burden's coping strategies intervention with caregivers of chronic hemodialysis children will reduce their burden.

3.3. Research Design

Quasi-experimental design (one group pre test post test design) was used to achieve the aim of the study.

3.4. Research Setting

The study was conducted at hemodialysis units at the Menofuia University Hospital at Shebin El-kom city, Menoufia Governorate, Egypt and Tanta University Hospital at Tanta city, El-karbeia Governorate, Egypt.

3.5. Subjects

A convenient sample compromised 50 caregivers of chronic hemodialysis children were selected in the chosen setting.

3.6. Instruments of the Study

Data were collected using the following tools:

Tool one: An Interviewing Questionnaire: It was designed by the researchers in Arabic language after reviewing the related literature. It was used to collect data related to: (1) **Caregiver's Demographic characteristics** such as; age, gender, marital status, level of education, occupation, monthly income, adequacy of income, residence , having children , number of children and having health problem. (2) **Child's Demographic characteristics** such as; age, gender, CKD Stage/Treatment, CKD Cause and time since diagnosis.

Tool two: Pediatric Renal Caregiver Burden Scale (PR-CBS) [21]. It was developed by Parham, 2011. The questions are conceptualized as belonging to caregiver burden as a multidimensional construct, defined as "an individual's subjective perception of overload in one or more of four perspectives: physical, psychological, social and financial through the caregiving process. This scale consisted of a 51-item self-report instrument. These items are classified into 9 subscales as the following: physical 2 items, financial 1 item, social 2 items, Emotional / Psychological 9 items, Caregiver Role / Identity 4 items, Impact on Family (Practical & Interpersonal Factors) 8 items, Impact on Child 5 items, CKD treatment responsibilities 12 items and Contact with hospital/medical staff: Practical & Interpersonal Factors 8 items. The pool of 51 items was subjected to rewording as appropriate for the developed measure instructions, and Likert response scale of: never (1), sometimes (2) always (3), with increased scores indicative of increased caregiver burden. The instrument was translated into Arabic language.

Final form was reached by consensus of experts. It was tested by a pilot study to investigate the feasibility and clarity of the tool and its translation.

Tool three: Ways of coping questionnaire. It will be used to assess caregivers coping strategies and it was developed by the researcher. It consists of 66 items. These items are classified into 8 coping subscales as the following: seeking social support 10 items, seeking spiritual support 5 items, planful problem-solving 5 items, confrontive coping 3 items and negative reappraisal 5 items. The subjects responds with a 3-point Likert scale (0 = does not apply; 1= used and 3 = used a great deal).

3.6.1. Reliability of the Tools

Reliability of Pediatric Renal Caregiver Burden Scale (PR-CBS) was applied by the researcher for testing the internal consistency of the tool, by administration of the same tools to the same subjects under similar conditions on one or more occasions. Answers from repeated testing were compared (Test-re-test reliability).

Reliability of Ways of coping questionnaire: The reliability of the developed tools used was assessed through the internal consistency method. The tool reliability proved to be very good, with Cronbach alpha coefficient 0.86.

3.6.2. Validity of the Tools

They were tested for content validity. The developed tools were reviewed by experts in nursing, nephrology and community health for clarity, relevance, comprehensiveness, understanding, applicability and ease for implementation. Validation was through majority agreement

3.7. Procedure

An official approval was obtained from the dean of faculty of nursing and the director of The Menofuia University Hospital at Shebin El-kom city Menoufia Governorate, Egypt and Tanta University Hospital at Tanta city, El-karbeia Governorate, Egypt. **Ethical Consideration:** An oral consent was obtained from caregivers of chronic hemodialysis children to participate in the study. During the initial interview, the purpose of the study and the procedures were explained and the oral consent was obtained from the participants. The subjects were assured that all information would be confidential to assure the confidentiality of the participants. Participants were assured that their participation in the study was voluntary and that they could withdraw from the study or can refuse to participate in the study. It was explained that there were no costs to participate in the study. Also, an oral approval was obtained from an ethic committee of the faculty of nursing, Menofuia University, Egypt. The questionnaire used in the study was administered by the researchers. The caregivers were briefed about the purpose of the study, encouraged to participate and motivated to express their feelings. The caregivers give fully informed verbal consent to participate. It was emphasized that all data collected was strictly confidential and the data would be used for scientific purposes only. Data collection for the study was carried out in the period from July 2014 to September 2014. The researcher collected the data during the morning at two days/week from 10 AM to 12 AM. The subjects were divided into 10 groups; each of them consisted of 5 caregivers. The period of implementation was 3 months. Implementation of the study passed into three phases (measure 1 assessment phase, implementation phase and measure 2 assessment phase).

3.7.1. Measure 1 Assessment Phase

A comfortable, private place was chosen for the interview. Orientation was done my name, purpose, significance, content. Subjects were interviewed individually at their rooms where pre- assessment was done using Paediatric Renal Caregiver Burden Scale and Ways of coping questionnaire.

3.7.2. Implementation Phase

This study hypothesized that application of the practical guide for burden's coping strategies intervention with caregivers of chronic hemodialysis children will reduce their burden. The practical guide for burden's coping strategies intervention aimed at to evaluate the effect of intervention with caregivers of chronic hemodialysis children on their burden. The intervention groups met for ten consecutive weekly sessions that lasted approximately 2 hr. The researcher led the group and the co-leader recorded the sessions. This intervention has a set of specific objectives for each of the ten sessions. This was achieved through several teaching methods such: brain storming, lecture, discussion, data show, video, role play, pictures and booklet were used as media. At the end of each session summary, feedback and further clarification were done for vague items.

The content of the practical guide for burden's coping strategies intervention sessions was as follows:

1. Introduction about the concept and nature of renal failure, causes of renal failure; how individual experience the symptoms of renal failure; methods of diagnosis and methods of treatments(prevention methods, nutritional counseling and treatment for renal failure)
2. Explain nutritional system for patient with renal failure
3. Explain the everyday stressors on caregivers in their lives (physical , psychological, economic and social)
4. Discuss how caregivers respond to stress.
5. Explain the activities those are useful in controlling stress and the healthy lifestyle.
6. Educate different methods to cope with physical and psychological stress.
7. How to make progressive muscle relaxation.
8. How to make deep breathing exercises.
9. How to make meditation

A short description of the stress management techniques employed in the study is discussed below.

1- Progressive muscle relaxation (PMR) (Jacobson, 1938) [22]

It is a technique for reducing stress and anxiety by alternately tensing and relaxing the muscles, it was developed by American physician Edmund Jacobson in the early 1920s. Jacobson argued that since muscles tension accompanies anxiety, one can reduce anxiety by learning how to relax the muscular tension. PMR entails a physical and mental component. Method/Path physiology: The physical component involves the tensing and relaxing of muscle groups over the legs, abdomen, chest, arms and face. In a sequential pattern, with eyes closed, the individual places a tension in a given muscle group purposefully for approximately 10 seconds and then releases it for 20 seconds before continuing with the next muscle group. The mental component requires that the individual focuses on the distinction between the feelings of the tension and relaxation. With practice, the patient learns how to effectively relax in a short period of time. Therefore, the individual is taught by the researcher, manual or audio how to progressively relax the major muscle groups and performs the sequence 2-3 times daily for 15-20 minutes per session.

2-Deep breathing exercises

Caregivers are taught by the researcher, manual or audio how to inhale and exhale deeper and slower. They need to practice several times a day, or as needed, for a few minutes to see immediate benefits. Method/Path physiology: - (1) Sit comfortably with your back straight. Put one hand on your chest and the other on your stomach. (2) Breathe in through your nose. The hand on your stomach should rise. The hand on your chest should move very little. (3) Exhale through your mouth, pushing out as much air as you can while contracting your abdominal muscles. The hand on your stomach should move in as you exhale, but your other hand should move very little. (4) Continue to breathe in through your nose and out through your mouth. Try to inhale enough so that your lower abdomen rises and falls. Count slowly as you exhale.

3- Meditation

Caregivers were given training in meditation, which involves assuming a comfortable position, closing the eyes, casting off all other thoughts and concentrating on a single word, sound, or a phrase that has positive meaning to the individual. It can be practiced 20 m. Once or twice daily.

3.7.3. Measure 2 Assessment Phase

An Evaluation was done using the Pediatric Renal Caregiver Burden Scale and Ways of coping questionnaire.

3.8. Data Processing and Analysis

The results were statistically analyzed by SPSS version 20. Student's t-test, one a way ANOVA (F test) and paired t test were used for parametric data. Mann-Whitney was used for non-parametric data. Chi-Squared (χ^2) was used for qualitative variables. Spearman Correlation analysis was used to show strength and direction of association between variables. P value <0.05 was considered significant.

4. Results

Table (1) showed basic characteristics of the caregivers. As noticed from the table that nearly half of the studied caregivers (52.0%) were in the age group (40+) years, 76.0 % of the studied caregivers were female, the majority of the studied caregivers (94.0%) were married, most of them (86.0 %) live in Urban. Regards to Father's education, 38.0% were illiterate, regards to Father's occupation 60.0% were unskilled workers. Also, nearly half of the studied caregivers (54.0%) had enough income, 44.0% of the studied caregivers had health problems & 45.5% of them had Arthritis and 48.0% of the studied caregivers had more than four children.

Table (2) illustrated basic characteristics of the caregivers' children. As indicated from the table, 62.0% of the studied caregivers' children had more than ten years, 54.0% were female, 26.0% of children reported that their diagnosis was less than one year and 54.0% of children reported that cause of renal failure is Kidney disease.

Table (3) showed a comparison of the total score of burden and coping strategies before and after intervention. As shown from the table, regarding to total burden scores, there was a highly statistically significant reduction in total burden scores after intervention (97.54 ± 13.51) compared with (120.02 ± 16.34) before intervention. Regarding total coping scores, there was highly statistically significant improvement in total coping scores after intervention (58.86 ± 6.65) compared with (51.66 ± 8.81) before intervention.

Figure (1) showed that, there were highly statistically significant differences between pre and post intervention program regarding total burden and coping scores

Table (4) illustrated the correlation between total burden score and some studied parameters. As noticed from the table, there was negative and highly significant relation between parent's education and total burden and there was a negative relation between duration of illness and total burden but not significantly. While there were significant positive relation between income and total burden. Also, the above table showed that there was a positive relation between child age, parent's age, number of children and total burden but not significant.

Table (5) showed that relation between total scores of caregiver's burden scale and some chosen parameters. As noticed from the table, Caregivers in the age group (40+) years perceived a high degree of burden of care when compared to caregivers in the age group (30+) years, but not significant (124.31 ± 17.61 vs 113.0 ± 10.17 , $P=0.227$). The statistically significant higher burden was observed in female caregivers when compared with male caregivers (123.13 ± 15.19 vs 110.17 ± 16.54 , $P=0.015$). Married caregivers perceived a high degree of burden of care when compared to divorced and widow caregivers, but not significant (120.21 ± 16.07 vs 117.0 ± 24.24 , $P=0.745$). Caregivers residing in rural areas reported a high degree of burden of care when compared to caregivers residing in urban areas, but it was not significant (122.86 ± 8.47 vs 119.56 ± 17.31 , $P=0.438$). The statistically significant higher burden was observed in illiterate caregivers when compared with caregivers had secondary education (130.58 ± 9.70 vs 106.33 ± 18.79 , $P=0.002$). the statistically significant higher burden was observed in unskilled worker when compared with administrative worker (126.37 ± 15.71 vs 104.33 ± 17.04 , $P=0.003$). The statistically significant higher burden was recorded on caregivers living in low income families when compared with caregivers living in higher income (127.56 ± 11.31 vs 112.14 ± 17.52 , $P=0.057$). Caregivers with health problems perceived a high degree of burden of care when compared to Caregivers without health problems, but it was not significant (124.59 ± 14.42 vs 116.43 ± 17.10 , $P=0.079$). Caregivers with three children perceived a high degree of burden of care when compared to Caregivers with one or two children, but it was not significant (123.58 ± 14.84 vs 120.50 ± 4.04 and 118.60 ± 13.86 , $P=0.859$).

Table (6) shows that relation between total scores of coping and some chosen parameters. As noticed from the table, the mean score of coping strategies was slightly higher among young age, male, divorced/widow, illiterate, not working, without health problems and those of urban areas (65.33 ± 16.16 , 52.16 ± 11.29 , 58.33 ± 22.27 , 52.26 ± 7.94 , 56.0 ± 0.0 , 51.67 ± 8.47 , 53.06 ± 8.63) respectively. Also, there were statistically significant differences between total scores of coping and age, residence, father's education and with or without health problems. While there were no statistically significant differences between total scores of coping and sex, marital status, occupation and income.

Table 1: Socio-demographic characteristics of the caregivers:

Items	Frequency (n=50)	Percent (%)
Age		
<20	3	6.0
20-	12	24.0
30-	9	18.0
40+	26	52.0
Sex		
Male	12	24.0
Female	38	76.0
Marital status		
Married	47	94.0
Divorced/widow	3	6.0
Residence		
Urban	43	86.0
Rural	7	14.0
Father's education		
Illiterate	19	38.0
Read& write	4	8.0
Basic	7	14.0
Secondary	17	34.0
University	3	6.0
Occupation		
Unskilled worker	30	60.0
Skilled worker	10	20.0
Administrative worker	6	18.0
Not working	4	8.0
Income		
More than enough	7	14.0
Enough	27	54.0
Not enough	16	32.0
Health problem		
Yes	22	44.0
No	28	56.0
Type of health problem		
DM	8	36.4
Arthritis	10	45.5
Others and found	4	18.2
Children number		
1	4	8.0
2	10	20.0
3	12	24.0
≥4	24	48.0

Table 2: Socio-demographic characteristics of the caregivers' children

Items	Frequency (n=50)	Percent (%)
Age		
<1	2	4.0
1-5	5	10.0
5-10	12	24.0
10+	31	62.0
Sex		
Male	23	46.0
Female	27	54.0
Duration of illness		
≤1	13	26.0
>1-5	20	4.0
>5-10	11	22.0
>10	6	12.0
Cause of illness		
Congenital anomalies	7	14.0
Kidney disease	27	54.0
Tumor	16	32.0

Table 3: Comparison of Total Burden Scores before and after Intervention and Total Coping Strategies Scores before and after Intervention.

Items	Pre (n=50)	Post (n=50)	Paired t test	P value
	Mean ±SD	Mean ±SD		
Total burden Score	120.02 ±16.34	97.54 ±13.51	29.27	<0.001
Total Coping Strategies Score	51.66 ±8.81	58.86 ±6.65	10.75	<0.001

Figure 1: Means of Total Burden and Total Coping Strategies Scores before and after Intervention.

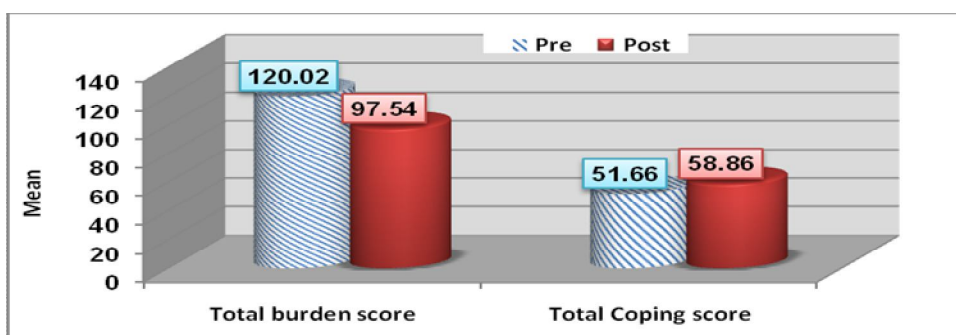


Table 4: Correlation between Total Burden Score and Some Studied Parameters:

Some Studied Parameters	Total Burden	
	r	P value
Child Age	0.244	0.087
Duration of Illness	-0.074	0.611
Parent's Age	0.260	0.068
Parent's Education	-0.551	<0.001(HS)
Income	0.323	0.022(S)
Number of Children	0.058	0.688

Table 5: Relation between Total score of caregiver's burden scale and some chosen parameters:

Items	Total burden		
	Mean \pm SD	Test	P value
Age <20 20- 30- 40+	121.67 \pm 20.20 115.58 \pm 15.13 113.0 \pm 10.17 124.31 \pm 17.61	F=1.49 P=0.227	1 vs. 2=0.561 1 vs. 3=0.424 1vs. 4=0.789 2 vs. 3=0.718 2 vs. 4=0.127 3 vs. 4=0.076
Sex Male Female	110.17 \pm 16.54 123.13 \pm 15.19	t=2.52	P=0.015
Marital status Married Divorced/widow	120.21 \pm 16.07 117.0 \pm 24.24	t=0.32	P=0.745
Residence Urban Rural	119.56 \pm 17.31 122.86 \pm 8.47	t=0.79	P=0.438
Father's education Illiterate 1 Read& write2 Basic3 Secondary4 University5	130.58 \pm 9.70 119.75 \pm 14.61 118.14 \pm 13.88 106.33 \pm 18.79 120.0 \pm 0.57	F=4.85 P=0.002	1 vs. 2=0.174 1 vs. 3=0.065 1vs. 4<0.001 1 vs. 5=0.009 2 vs. 3=0.858 2 vs. 4=0.302 2 vs. 5=0.224 3 vs. 4=0.303 3 vs. 5=0.236 4 vs. 5=0.568
Occupation Unskilled worker1 Skilled worker2 Administrative worker3 Not working4	126.37 \pm 15.71 114.0 \pm 9.39 104.33 \pm 17.04 120.0 \pm 8.66	F=5.49 P=0.003	1 vs. 2=0.007 1 vs. 3=0.001 1vs. 4=0.256 2 vs. 3=0.349 2 vs. 4=0.480 3 vs. 4=0.165
Income More than enough1 Enough2 Not enough3	112.14 \pm 17.52 117.59 \pm 17.34 127.56 \pm 11.31	F=3.05 P=0.057	1 vs. 2=0.417 1 vs. 3=0.035 2vs. 3=0.050
Health problem Yes No	124.59 \pm 14.42 116.43 \pm 17.10	t=1.79	P=0.079
Children number 1 2 3 \geq 4	120.50 \pm 4.04 118.60 \pm 13.86 123.58 \pm 14.84 118.75 \pm 19.42	F=0.25 P=0.859	1 vs. 2=0.849 1 vs. 3=0.751 1vs. 4=0.847 2 vs. 3=0.490 2 vs. 4=0.981 3 vs. 4=0.418

Table 6: Relation between Total score of coping Strategies and some chosen parameters:

Items	Coping Strategies		
	Mean \pm SD	Tes t	P value
Age <20 20- 30- 40+	65.33 \pm 16.16 47.91 \pm 6.47 49.77 \pm 9.33 52.46 \pm 7.33	F=3.94 P=0.014	1 vs. 2=0.002 1 vs.3=0.006 1vs. 4=0.012 2 vs. 3=0.605 2 vs. 4=0.115 3 vs. 4=0.397
Sex Male Female	52.16 \pm 11.29 51.50 \pm 8.04	t=0.22	P=0.822
Marital status Married Divorced/widow	51.23 \pm 7.61 58.33 \pm 22.27	Mann-Whitney =0.06	P=0.951
Residence Urban Rural	53.06 \pm 8.63 43.0 \pm 3.26	t=3.02	P=0.004
Father's education Illiterate1 Read& write2 Basic 3 Secondary4 University 5	52.26 \pm 7.94 51.75 \pm 6.07 52.14 \pm 15.72 51.47 \pm 7.93 47.66 \pm 2.30	F=7.59 P<0.001	1 vs. 2=0.919 1 vs.3=0.976 1vs. 4=0.796 1 vs. 5=0.422 2 vs. 3=0.946 2 vs. 4=0.956 2 vs. 5=0.561 3 vs. 4=0.870 3 vs. 5=0.481 4 vs. 5=0.509
Occupation Unskilled worker1 Skilled worker2 Administrative worker3 Not working4	54.96 \pm 9.01 44.90 \pm 3.63 43.50 \pm 3.67 56.0 \pm 0.0	F=1.0 P=0.378	1 vs. 2=0.001 1 vs.3=0.001 1vs. 4=0.795 2 vs. 3=0.717 2 vs. 4=0.015 3 vs. 4=0.012
Income More than enough1 Enough2 Not enough3	50.42 \pm 5.47 50.88 \pm 7.84 53.50 \pm 11.37	F=0.51 P=0.604	1 vs. 2=0.903 1 vs.3=0.450 2vs. 3=0.357
Health problem Yes No	51.63 \pm 9.42 51.67 \pm 8.47	t=0.01	P=0.987
Children number 1 2 3 \geq 4	47.50 \pm 5.19 53.60 \pm 11.90 55.08 \pm 7.46 49.83 \pm 8.09	F=1.44 P=0.242	1 vs. 2=0.242 1 vs.3=0.138 1vs. 4=0.622 2 vs. 3=0.692 2 vs. 4=0.256 3 vs. 4=0.094

5. Discussion

When a person is suffering from a chronic disease, often the whole life situation is changing for both the person and the family. The aim of this study was to determine the effect of practical guides for burden's coping strategies intervention with caregivers of chronic hemodialysis children on their burden.

Regarding comparison of total scores of burden before and after intervention there was a highly statistically significant reduction in total burden scores after intervention (97.54 ± 13.51) compared with (120.02 ± 16.34) before intervention (table 3 and figure 1). The finding of the present study is similar to [23] findings; the researcher examined the effect of the nursing intervention program on improving caregivers' coping abilities toward their stressors and burden among 50 caregivers of patients with cerebrovascular stroke at outpatient clinic of Neuropsychiatry in Ain Shams University Hospitals, Egypt. The researchers reported that three fifths of a stroke caregivers were suffering from a sever burden before program intervention, meanwhile in post-program intervention they were experiencing a mild burden. This may be due to being close to patients who consequently leads to high level of burden. On the other hand, caregivers who experienced sever level of stress and learned how to use the coping strategy of problem solving so their burden decreased enormously. Improvements could be referred to its content, which was developed based on the caregivers' needs for self care, as well as to its clarity, simplicity, illustrated with pictures, using simple language, frequent repetition and discussion to fix the knowledge.

Concerning comparison of total coping strategies before and after intervention there was highly statistically significant improvement in total coping scores after intervention (58.86 ± 6.65) compared with (51.66 ± 8.81) before intervention (Table 3 and figure 1). The finding of the present study is supported by [23] findings; the researcher examined the effect of the nursing intervention program on improving caregivers' coping abilities toward their stressors and burden among 50 caregivers of patients with cerebrovascular stroke at the outpatient clinic of Neuropsychiatry in Ain Shams University Hospitals, Egypt. The researchers indicated that there were improvements of coping abilities from a low percentage of pre-program to high in a post-program which showed statistically significant difference. Coping abilities upgraded enormously post intervention. This may be attributed to that in Egypt like in other developing countries caring for a relative with a disability is a moral obligation. Meanwhile, in post-program their coping level became high. This could be due to that caregivers dealt effectively with the problems of their patients related to understanding their patients' disability and determined the impact of the stressors on their lives, hence increasing awareness of the caregivers about patients and their care helped them to be able to perform well, managing their Caregiving responsibilities and coping effectively with their stressors.

In accordance with the finding of the present study, [24] findings; the researcher studied the effectiveness of psychosocial intervention for family caregivers on the psychosocial wellbeing clarified that psychosocial interventions increasing the availability of education, social and emotional support for family caregivers offered a benefit for caregivers to being able to offer care for themselves a longer period of time, their relationships with patient, other family members and friends became less strained and thus enhanced the potentially supportive nature of these relationships, in addition to education and support offered to caregivers, ways to deal creatively with their problems and the restrictions that they are experiencing in their everyday life and giving chances for enhancing and maintaining their own health, social and emotional wellbeing.

Concerning correlation between total burden score and some studied parameters. The finding of the present study illustrated that there was negative and the highly significant relation between parent's education and total burden and there was a negative relation between duration of illness and total burden but not significant, while there was a positive significant relation between income and total burden. Also, the above table showed that there was a positive relation between child age, parent's age, number of children and total burden but not significant (Table 4). Related to parent's education, the finding of the present study is supported by [25] findings; the researcher assessed the relationship of family caregiver burden with socio-demographic characteristic (age, gender, education level, employment, marital status, economic status and kinship status) of 118 caregivers of with schizophrenic attending the outpatient in pemropsu mental health hospital of the Province of North Sumatera. The researchers reported that the education level has negative correlation with caregiver burden. It was assumed that the higher the level of education, higher the salary will be. High salary would decrease financial problem related to providing care for the ill member.

Level education of the caregiver also tends to have more knowledge to deal with the stressful event. Therefore the caregiver's education level influences burden of the caregiver. Also, finding of the present study are similar to [26] findings; the researcher conducted a cross-sectional survey of 50 caregivers for their patients enrolled in the Security Forces Hospital, Riyadh, Saudi Arabia. The researcher reported that there was a statistically significant negative correlation between caregiver's burden score and level of education.

Moreover, regarding parent's age the present study results in congruence with [27] findings; the researcher assessed the burden on Indian caregivers of the patients with schizophrenia and its relation to various socio-demographic variables. The study's authors reported that the age of the caregiver was positively correlated to the burden of caregivers. When the caregiver becomes older, they are worried about who will take care of their ill family member in the future. The older caregiver also cannot provide care well for the ill member. In this regard, the present study's finding is supported by [28] findings; the researcher assessed Caregiving burden and social support among Indian caregivers of schizophrenic patients. The researcher reported that age has no statistically significant impact on the Caregiving burden ($p=0.334$). Similar finding are given by other studies [29-31] that age has no statistically significant impact on caregiver burden. In addition, concerning child's age the finding of the present study comes in agreement with [26] findings; the researcher conducted a cross-sectional survey of 50 caregivers for their patients enrolled in the Security Forces Hospital, Riyadh, Saudi Arabia. The researcher reported that there was a positive correlation between total caregivers' burden score and patients' age. Related to income the finding is similar to what was reported by [32] findings; the researcher performed a cross-sectional community-based study to examine the relationship between income, subjective health and caregiver burden in caregivers of people with dementia in group living care. The researchers indicated that income may have an influence on the burden of the caregiver.

Regarding the relation between total scores of caregiver burden scale and some chosen parameters, the finding of this study revealed Caregivers in the age group (40+) years perceived a high degree of burden of care when compared to caregivers in the age group (30+) years but not significant (124.31 ± 17.61 vs 113.0 ± 10.17 , $P=0.227$). The statistically significant higher burden was observed in female caregivers when compared with male caregivers (123.13 ± 15.19 vs 110.17 ± 16.54 , $P=0.015$). Married caregivers perceived a high degree of burden of care when compared to divorced and widow caregivers, but not significant (120.21 ± 16.07 vs 117.0 ± 24.24 , $P=0.745$). Caregivers residing in rural areas reported a high degree of burden of care when compared to caregivers residing in urban areas, but it was not significant (122.86 ± 8.47 vs 119.56 ± 17.31 , $P=0.438$). The statistically significant higher burden was observed in illiterate caregivers when compared with caregivers had secondary education (130.58 ± 9.70 vs 106.33 ± 18.79 , $P=0.002$). The statistically significant higher burden was observed in unskilled worker when compared with administrative worker (126.37 ± 15.71 vs 104.33 ± 17.04 , $P=0.003$). The statistically significant higher burden was recorded on caregivers living in low income families when compared with caregivers living in higher income (127.56 ± 11.31 vs 112.14 ± 17.52 , $P=0.057$). Caregivers with health problems perceived a high degree of burden of care when compared to Caregivers without health problems, but it was not significant (124.59 ± 14.42 vs 116.43 ± 17.10 , $P=0.079$). Caregivers with three children perceived a high degree of burden of care when compared to Caregivers with one or two children, but it was not significant (123.58 ± 14.84 vs 120.50 ± 4.04 and 118.60 ± 13.86 , $P=0.859$) (Table 5). Related to age group the finding is similar to what was reported by [27] findings; the researcher assessed the burden on Indian caregivers of the patients with schizophrenia and its relation to various socio-demographic variables. Regarding age group, the researcher reported that significantly lower burden ($p<0.001$) existed in the caregivers between 36 to 45 years of age when compared with age group 16 to 35 years. The younger caregivers perceived more problems because most of them were starting their careers and were less patient, mature and resilient. On the hand, this is in contrast to the findings of the present study that caregivers in the age group (40+) years perceived a high degree of burden of care. This may be due to caregivers have more children at different educational stages and increased children's demands.

Related to gender, the researcher indicated that female caregivers experienced significantly higher burdens ($p<0.001$) than male caregivers. Female caregivers feel a higher burden specifically in two areas caregiver's routines and other relations. The higher burden on area of caregiver's routine can be attributed to the more caring nature of females who give their time to care of patients in addition to time spent in routine household work and in caring other family members and were left time to pursue their friendships and relationships outside the one with the patient.

In the same way Oxytocin hormone in female will increase and it will contribute to develop depressive symptoms. Another study by [30] findings; the researcher assessed differences in psychosocial outcomes between male and female caregivers of children with life-limiting illness showed that there was a significant difference in gender in term of their burden.

Also, the present study finding is supported by [28] findings; the researcher assessed Caregiving burden and social support among Indian caregivers of schizophrenic patients. The researcher reported that gender has statistically significant impact of Caregiving burden ($p= 0.0165$). In this regard, the findings of [31] supported the present study's findings of the statistically significant impact of gender in term of Caregiver burden as ($p= 0.024$). Moreover, the present study comes into agreement with [33] findings; the researcher performed a cross sectional descriptive study among the caregiver of 60 Indian children with Duchene Muscular Dystrophy who were attending the neuromuscular disorders clinic of a national tertiary referral center for Neurological disorders. The study's researchers found that mother and other female caregivers to experience greater levels of stress than the fathers, and other male caregivers. Also, men and women differed on their family burden significantly ($p<0.01$) with the female respondents having significantly more family burden. Further, mothers reported more burdens in terms of disruption of family interaction than the fathers. Related to residence, [27] findings relieved that families residing in rural areas experienced statistically significant higher total burden ($p<0.005$) than those who are from urban backgrounds. Rural caregivers had less access to medical facilities and had to come to the city for medicines and advice. It was also difficult for them to bring the patient for follow up due to inadequate facilities of transportation. Moreover, regarding income, there was statistically significantly higher total burden was recorded on caregivers living in low income families when compared to caregivers living in higher income families ($p<0.001$). Lower income was a stressor that influence stress feeling during providing care for an ill family member. Beside caregivers providing care for ill member, they also had to solve financial problem and find out source of money.

Related to educational level, significantly higher total burden ($p<0.01$) was observed in caregivers educated up to class v. This was because most of the caregivers in this group were laborers or housewives who had to work hard and were consequently not able to give adequate time to their other family members and friends. They also had problems in understanding the nature of illness, in following prescriptions, in identifying medicines, while interacting with health professionals and coping with the patient's illness in general. In addition, related to the occupation, there was significantly more burden ($p<0.001$) on housewives as compared to other occupations. The burden was higher in areas of physical and mental health, caregiver's routines and other relations and total score. This can be explained by the fact that housewives stayed at home 24 hours a day and were in continuous contact with the patient while caregivers in job went out and had a sort of regular daily break. Also, those in job had an assured monthly income in contrast to the housewives who had no source of income. Concerning marital status, in the present study it was found that marital status has no statistically significant impact on the Caregiving burden ($p= 0.745$). The present study finding is similar to [28] findings, the researcher assessed Caregiving burden and social support among Indian caregivers of schizophrenic patients. The researcher reported that marital status has no statistically significant impact on the Caregiving burden ($p=0.1978$).

Regarding the relation between total scores of coping strategies and some chosen parameters. The finding of the present study demonstrated that the mean score of coping strategies was slightly higher among young age, male, divorced/widow, illiterate, not working, without health problems and those of urban areas (65.33 ± 16.16 , 52.16 ± 11.29 , 58.33 ± 22.27 , 52.26 ± 7.94 , 56.0 ± 0.0 , 51.67 ± 8.47 , 53.06 ± 8.63) respectively. Also, there were statistically significant differences between total scores of coping and age, residence, father's education and with or without health problems. While there were no statistically significant differences between total scores of coping and sex, marital status, occupation and income (Table 6). The finding of the present study is similar to [34] findings, the researcher assessed burden and coping strategies in 100 caregivers of schizophrenic patients from psychiatric inpatient and the out patient clinic of the Neuropsychiatry Department at Assiut University Hospital, Egypt. The researchers reported that the mean score of coping strategies was slightly higher among younger age groups, male, divorced/widow and those in urban areas.

6. Conclusions:

The application of practical guides for burden's coping strategies intervention with caregivers of chronic hemodialysis children reduced their burden and has succeeded in achieving significant improvement in caregivers' coping strategies.

7. Recommendations

Implementation of practical guides for burden's coping strategies intervention for all caregivers' chronic disease patients

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