

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

Entsar A. Abdelsalam¹, Hanady Sh. Shehata², Hanan G. El-Bready³, Hayam Labib⁴

¹Assistant Professor of Geriatric Nursing, ⁴lecturer of Geriatric Nursing, Faculty of Nursing, Menoufia University, Egypt

²Assistant Professor of Family and Community Health Nursing, ³lecturer of Family and Community Health Nursing, Faculty of Nursing, Menoufia University, Egypt

ABSTRACT: Hemodialysis is a prolonged process that affects all life aspects of the patient and his family that needs for supporting caregiver to decrease burden and powering coping strategies. **Purpose:** to evaluate the effect of family centered empowerment intervention on burden and coping strategies among caregivers of elderly patients undergoing hemodialysis. **Design:** A quasi-experimental design with pre, post-test was utilized. **Setting:** hemodialysis units at Menoufia University Hospital and Shebin Elkom Teaching Hospital in Menoufia Governorate, Egypt. **Sampling:** A purposive sample of 75 family caregivers for elderly patients undergoing hemodialysis. **Instruments:** Two instruments were used (Characteristics of Patients and Care Givers Structured Interview Questionnaire and Zarit Burden Interview Questionnaire) **Results:** The burden level on caregivers of hemodialysis patients was reduced after implementing the family centered empowerment intervention in post-intervention than pre-intervention (mean of Zarit burden test on post intervention was 43.5 ± 14.2 compared to 34.9 ± 12.2 pre intervention). Also, there was a significant improvement in the positive coping strategies post intervention compared to pre intervention. **Conclusion:** Family centered empowerment intervention was effective in reducing burden among caregivers for hemodialysis patients and improving coping strategies that can help caregivers to adjust with burden of caring. **Recommendation:** Caregivers' burden should be monitored and family empowerment interventions should be implemented to offer psychosocial support for caregivers. Problem focused coping should be encouraged as it helps in positive outcomes.

Keywords: Burden of care, coping strategies, elderly patients, hemodialysis, and family centered empowerment

Introduction

Chronic diseases are major contributors to morbidity, mortality, decreased quality of life and have become national public health problems (Centers for Disease Control and Prevention (CDC), 2021). Kidney disease is a global public health issue that affects over 750 million people

worldwide (Crews et al., 2020). The United States Renal Data System 2020 Annual Data Report estimates that almost 786,000 Americans have end-stage renal disease (ESRD), with 71% relying on dialysis (United States Renal Data System, 2020). The prevalence of ESRD increased to 483

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

patients per million people in Egypt, according to the 9th Annual Report of the Egyptian Renal Registry. In 2020, 58.7% of dialysis patients were males, and half of them were 55 years of age or older (El-Ballat et al., 2021).

Age-related physiological changes to the renal system increase the susceptibility of the elderly to kidney disorders. The arteries supplying the kidneys may shrink, and kidney size may decrease. Additionally, the ability of the nephrons to remove waste decreases when the walls of the tiny arteries that flow into the glomeruli thicken. Both kidneys may need to work at nearly their full capacity to carry out all the normal kidney functions. As a result, even small harm to one or both kidneys might cause renal function to be lost (Glenn, 2022).

Hemodialysis is the most commonly employed renal replacement therapy for individuals with chronic kidney disease, which is considered a highly invasive treatment and very costly chronic therapy. Hemodialysis patients experience changes in lifestyle, health, and social roles. The physical, mental, and social health of their caregivers are significantly impacted by the fact that 94% of hemodialysis patients dialyze three times per week, with 81% of them spending four hours on dialysis per session. This can result in a heavy burden and caregiver burnout (El Sharkawy et al., 2021).

The elderly undergoing hemodialysis frequently rely on their carers to assist them with their medical needs and daily living activities. (Talebi et al., 2020). The burden of care is used to characterize the severely difficult side effects of care for patients and their families. The burden may be physical, psychological, emotional, social, or economic in nature (Abbasi et al., 2021). The nurse plays a crucial role in

training the family caregivers on coping mechanisms to get through everyday problems; dealing with stress; offering them more power for better coping; and handling their informational demands regarding the complex healthcare system and patients' needs (Tejada-Tayabas et al., 2020). Effective and adaptive coping strategies may serve as a protective factor in lowering caregiver distress and discomfort (Kazemi et al., 2021).

Family empowerment can reduce strain by enhancing physical and mental capabilities and increasing self-ability (Alnazly & Samara, 2020). The four steps of the family-centered empowerment approach are as follows: First, knowledge is increased through educational sessions that use teaching aids such as power point presentations, posters, models, and handouts, as well as teaching techniques such as group discussions and question-and-answer sessions (El-Melegy et al., 2022). Step two involves building self-efficacy. Step three involves participating in educational activities to raise self-esteem. Step four involves evaluation procedures during the empowerment process (Wang et al., 2021).

Significance of the study:

End-stage renal disease (ESRD) is a widespread issue that places a heavy cost on the economy and healthcare system. It is a serious public health concern, because of its high morbidity and mortality as well as the significant social and financial burden of this disease (Noorul et al., 2021) and its high prevalence (Asadzadeh et al., 2022). According to WHO statistics, which were published in 2020, there were 21,087 kidney disease deaths in Egypt. That represents 3.93% of total deaths. (Columbia University Mailman School of Public Health, 2021). The burden of chronic kidney disease (CKD) has increased by 35.7% in

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

Egypt (University of Washington Center for Health Trends and Forecasts, 2021), ranking as the seventh leading cause of death in Egypt (Himmelfarb et al., 2020). Caregivers of patients receiving hemodialysis may experience physical and mental health problems as a result of having a large number of caring responsibilities (Abbasi et al., 2021). It is necessary for health care professionals to be aware of the crucial role played by family members of patients with renal disease in providing care and effectively interact and communicate with them and offer assistance when needed (Seri et al., 2020).

Purpose:

To assess the effect of family centered empowerment intervention on burden and coping strategies among caregivers of elderly patients on hemodialysis.

Hypotheses:

- The burden level on caregivers of hemodialysis patients will be minimized after implementing the family center empowerment model in post-intervention rather than pre-intervention.
- Coping strategies of caregivers of hemodialysis patients will be improved after implementing the family center empowerment model in post-intervention rather than pre-intervention.

Methods

Research design:

A quasi-experimental design (pre, post-test was utilized).

Setting:

The study was carried out in the hemodialysis units at Menoufia University Hospital and Shebin Elkom Teaching Hospital in Menoufia Governorate, Egypt.

Sampling:

A purposive sample of 75 family caregivers for elderly patients undergoing hemodialysis therapy who met the following criteria was utilized:

Inclusion criteria:

- Aged 18 years or older
- Responsible for caring for the elderly
- Able to communicate

Sample size:

The sample size was calculated through OpenEpi, Version 3, Open source calculator--SSPropor, at 5% α error (95.0% confidence level). The calculated sample size was 74 were approximate to 75 caregivers.

Equation: Sample size $n = \frac{[DEFF * Np(1-p)]}{[(d/2)^2 - \alpha/2 * (N-1) + p*(1-p)]}$ where:

N= Population size

P= Hypothesized % frequency of outcome factor in the population

d= Confidence limits as % of 100

DEFF= Design effect

Instruments:

The following two instruments were used to gather the data for this study:

Instrument one: Characteristics of patients and caregivers structured interviewing questionnaire It was developed by the researcher after a review of related literatures review It contained two parts.

- **Part one:** Characteristics of elderly patients. It contained information related to characteristics of the elderly patients such as age, sex, social status, level of education, occupation, and income. Also, it contained medical history such as having other diseases or taking medications, duration of hemodialysis.
- **Part two:** Characteristics of family caregivers. It contained characteristics of caregivers including age, sex, education level, occupation, social status,

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

relationship to the elderly, care time, and caregiving hours. Also, it contained health problems of caregivers such as diabetes mellitus, hypertension, or cardiovascular diseases. Besides, it included coping strategies used by caregivers. This part was used to assess what coping strategies were used by the caregivers. It included 22 statements covering mechanisms like spirituality, practicing sports, reading, social activities, counseling, etc. Scoring system was providing one for Yes statement and zero for no response.

Instrument two: Zarit Burden

Interview: a new short version and screening version developed by Bedard et., al. (2001). This instrument consisted of 22-items. It was filled out by caregivers as a measure of their subjective reactions for providing care, including feelings of stress, embarrassment, anger, strain, and suffering due to their involvement, fear for their relative's future, concern over how it will affect their social lives, relationships, and financial situation, fear that they won't be able to provide for him more, and feeling like they've lost control of their lives since their relative's death.

Scoring system

The burden interview was graded by adding up the responses to each of the five likert scale items and represented as follows. There is no or very little burden (0-20); mild to moderate burden (21-40); moderate to severe burden (41-60); and severe burden (61-88).

Validity of the instruments:

Experts translated the study's instruments into Arabic. After that, the Arabic version was translated into English and any differences in meaning were taken into account. Five

professionals (three professors and two assistant professors) in the fields of geriatric nursing, family and community health nursing, and community medicine. In accordance with the panel's recommendations, changes were made to improve the clarity of the sentences and the relevance of the contents.

Reliability of the instruments:

Test re-test was used to determine the reliability. Reliability of instrument one was 0.87. Reliability of instrument two was 0.78.

Pilot Study

A pilot study was conducted in order to evaluate the clarity of the study instruments and establish the amount of time needed to complete the questionnaire. It was carried out on 10% (8 subjects) Sample of the pilot study was excluded from the total study sample.

Ethical considerations

Official approval was obtained from the Research and Ethics Committee of the Faculty of Nursing, Menoufia University. An official written consent was obtained from each of the study participants after being informed of the study goals and methods. They were reassured of the privacy and confidentiality of their data. The study participants were informed that they could withdraw from participating in the study at any time according to their will.

Procedure

- Before starting the study, a formal letter was submitted from the dean of the Faculty of Nursing to the directors of Menoufia University Hospital and Shebin El Kom Teaching Hospitals explaining the purpose and methods of data collection.
- Data collection period started from the beginning of March to the end

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

of June, 2022. Data was collected three days per week during time shifts. The average time spent for data collection of pretests took about one month. The average time that was taken for filling out each questionnaire was about 30 to 45 minutes, according to each caregiver's response.

- **Pre-intervention assessment phase:** A comfortable, private waiting room at each hemodialysis unit for caregivers of hemodialysis patients was chosen for collecting initial assessment. Before the intervention, all the participants should have already finished answering questionnaires in the two instruments. The training programme was planned and developed accordingly. Also, it was based on the FCEM steps. They included perceived threats, self-efficacy promotion, self-esteem promotion, and evaluation after intervention. Intervention packages were also developed by the researchers using literature reviews.
- **Implementation Phase:** In order to facilitate the empowerment process, the caregivers were divided into 8 groups of caregivers. Health education was provided in private waiting room. Each group included 9 to 10 people. Each patient received 8 sessions. The first session started by explaining the goals of the family centered empowerment intervention and improve knowledge about disease. Second session included improve health lifestyle. Third session contained improve self-efficacy. Fourth session for improve self-esteem. Fifth session included improve interpersonal relation. Sixth session contained spiritual wellbeing. Seventh session for problem solving technique and

relaxation technique in the last session. Sessions were conducted two times/week. Group discussions, demonstrations and redemonstrations were conducted about taking care of dialysis sites. Teaching aids, included power point presentations and photos. Each session lasted between 1 and 1.5 hours.

- **Evaluation phase:** A Post test data was done after 2 months of the application of nursing intervention using the same pretest assessment instruments. The purpose of the posttest was to evaluate the effect of the empowerment intervention.

Statistical Analysis

After the collection of data, the data was coded and transformed into a specially planned form to be suitable for the computer entry process. Data was entered and analyzed by using the SPSS (Statistical Package for Social Science) statistical package version 22. The graphics were done using the Excel program. The quantitative data were expressed as mean and standard deviation (XSD) and analyzed using a paired t test to compare between pre and post-intervention results. The Chi-square test (χ^2) for a 2 x 2 table was used to analyze qualitative data (expressed as numbers and percentages). If P was $<.05$, a statistical significant difference was considered. A very highly statistical significant difference was found if $P <.01$.

Results

Table 1 illustrates the personal characteristics of patients. Their mean age is 66.2 ± 5.7 years. Females represent more than half of the sample (56.0%). The majority of the patients live with their caregivers (84%). For 36% of the elderly, dialysis lasts more than ten years. Regarding the relationship between caregivers and

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

patients, 72% of care givers were either daughters or sons of patients. Meanwhile, 16% were daughters in law.

Fig 1 illustrates the duration of disease among elderly undergoing Hemodialysis. In 44% of patients, the disease lasted between 5-10 years. Meanwhile, it lasted for 3-5 years among 8% of elderly patients.

Table 2 presents the characteristics of caregivers in the study sample. The mean age of the studied caregivers was 39.6 ± 7.5 . Approximately two-thirds of caregivers (68%) were females, and 72% of them were married. Monthly income was not enough as reported by 98% of the caregivers. More than half of caregivers had chronic illnesses.

Fig 2 This figure reveals that forty-eight percent of the caregivers had intermediate education, followed by 36% who can read and write, while only 4% are illiterate.

Table 3 reveals distribution of caregivers according to their level of burden. On posttest, a reduction is noticed in the level of burden among the caregivers. None of the caregivers had severe burden on posttest as compared with 16% on pretest. Also, mean level of burden was reduced on posttest (34.9 ± 12.2) as compared to pretest 43.5 ± 14.2 . For this reason, there were very highly statistical significant differences at 1% level of statistical significance.

Table 4 represents frequency distribution of caregivers according to their reported positive coping mechanisms before and after intervention. The most frequently encountered reported measure before and after the intervention was praying and reading the Koran (96% and 100.0%). On the other hand, the least followed measure on both pre and post

intervention was seeking for residence in an elderly house. An improvement in positive coping strategies was observed more in post intervention than pre intervention. Therefore, there were very highly statistical significant differences at 1% level of statistical significance.

Table 5 illustrates the frequency distribution of caregivers according to their reported negative coping mechanisms before and after intervention. The most frequently reported negative coping mechanism before and after intervention is the preference of isolation (72% versus 52%). Conversely, sleeping longer is the least used mechanism in both pre and post intervention. For this reason, there were very highly statistical significant differences between pre and post intervention at 1% level of statistical significance.

Table 6 presents frequency distribution of studied caregivers according to their health problems and level of burden. This table shows that caregivers who have no health problems have minimal level of burden while 12% of caregivers who have any chronic illness have severe level of burden. Therefore, there was very highly statistical significant difference between levels of burden among caregivers who have chronic health problem or not at 1% level of statistical significance.

Table 7 represents the frequency distribution of studied caregivers according to their living with elderly patients and level of burden. The table shows that 84% of caregivers living with elderly patients undergoing hemodialysis were having burden compared to 12% of caregivers who were not living with elderly patients undergoing hemodialysis.

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

Table (1): Frequency distribution of the studied elderly according to their personal Characteristics (n=75).

Characteristics	No.	%
Age(in years)	66.2 ± 5.7 SD	
Sex:		
Male	33	44
Female	42	56
Live with caregiver:		
Yes	63	84
No	12	16
Duration of dialysis:		
Less than three years	9	12
3-5 years	3	4
5-10	36	48
More than 10 years	27	36
Relationship with caregiver:		
Spouse	6	8
Daughter/son	54	72
Daughter in law	12	16
Grandson/granddaughter	3	4
Total	75	100%

Fig. 1. Duration of disease among elderly undergoing Hemodialysis.

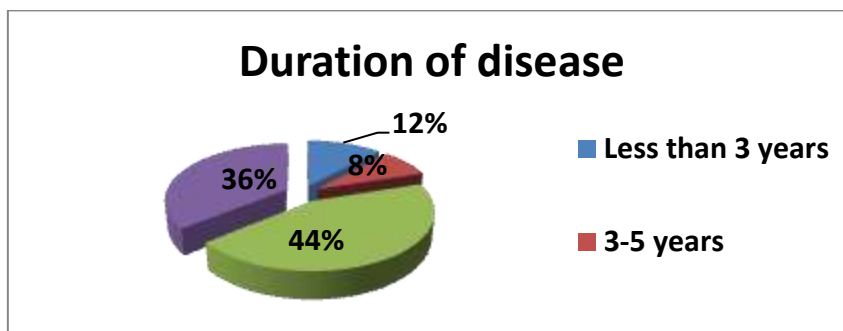


Table (2): Frequency distribution of the family caregiver according to their personal characteristics (n=75).

Characteristics	No.	%
Age(in years)	39.6 ± 7.5 SD	
Sex:		
Male	24	32
Female	51	68
Marital status:		
Single	18	24
Married	54	72
Divorced	3	4
Occupation:		
Work	30	40
Don't work	45	60
Income:		
Enough	9	12
Not enough	66	88
Chronic disease:		
Present	42	56
Not present	33	44
Duration of care:	5.2 ± 2.4 SD	

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

Total	75	100%
-------	----	------

Fig. 2. Distribution of educational level among studied caregivers.

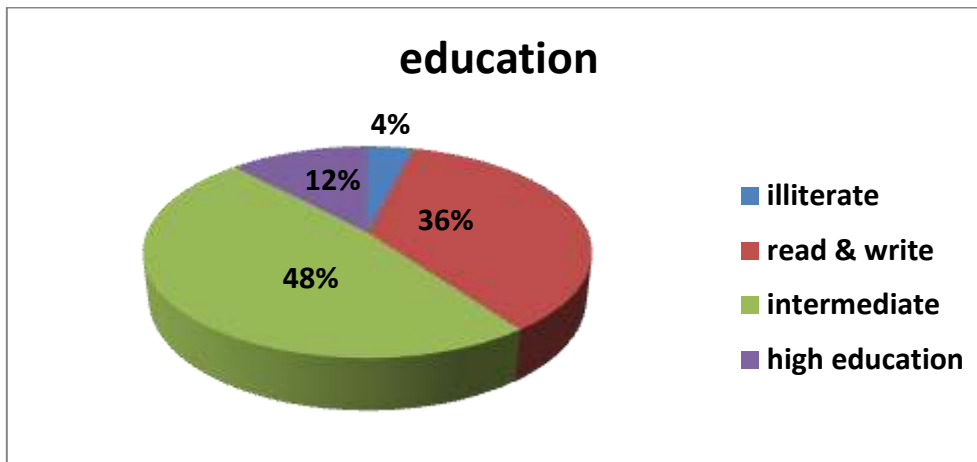


Table (3) Distribution of caregivers according to their level of burden on pre and post intervention.

Burden categories	Pre	Post	P. value
	No. (%)	No. (%)	
Minimal or no burden	12 16%	15 20%	< 0.001
Mild burden	9 12%	39 52%	
Moderate burden	42 56%	21 28%	
Severe burden	12 16%	0 0%	
Mean of burden total score	Mean ± SD 43.5±14.2	Mean ± SD 34.9±12.2	t= 11.47
Total	75 100%	75 100%	

Table 4: Frequency distribution of caregivers according to their reported positive coping mechanisms before and after intervention

Positive coping mechanisms	Before	After	p-value
	No. (%)	No. (%)	
Praying and reading Koran	72 (96%)	75(100%)	0.250
Seeking medical advice	57 (76%)	69 (92%)	0.001
Reading related books	27 (36%)	60 (80%)	0.001
Understanding the disease	54 (72%)	75 (100%)	0.001
Sharing of other in care	48 (64%)	75 (100%)	0.001
Searching for geriatric centers	9 (12%)	9 (12%)	-
Practising exercises	18 (24%)	45 (60%)	0.001
Sharing in social activity	6 (8%)	30 (40%)	0.001
Take advice from family member	48 (64%)	63 (84%)	0.001
Seeking advice from friends	30 (40%)	51 (68%)	0.001
Engage patient in social activity	9 (12%)	54 (72%)	0.001

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

Table 5: Frequency distribution of caregivers according to their reported negative coping mechanisms before and after intervention

Negative coping mechanisms	Before	After	p-value
	No. (%)	No. (%)	
Preferring isolation	54 (72%)	39 (52%)	0.001
Sleeping longer	18 (24%)	6 (8%)	0.001
Neglect some tasks at work	30 (40%)	18 (24%)	0.008
Wishing end of situation	42 (56%)	15 (20%)	0.001
Blaming others	33 (44%)	18 (24%)	0.001
Frequent crying	24 (32%)	6 (8%)	0.001
Avoid visits from others	54 (72%)	39 (52%)	0.001
Admitting patient geriatric home	21 (28%)	6 (8%)	0.007
More self-blaming	30 (40%)	15 (20%)	0.001
Leaving matters	42 (56%)	30 (40%)	0.001
More eating	21 (28%)	15 (20%)	0.031

Table (6) Frequency distribution of studied caregivers according to their health problems and level of burden.

Level of burden	Health problems		Total	P- value
	Yes	No		
Minimal or no burden	0	12	12	X ² = 32.4 P<0.001
	0%	16%	16%	
Mild burden	9	0	9	
	12%	0%	12%	
Moderate burden	21	21	42	
	28%	28%	56%	
Severe burden	12	0	12	
	16%	0%	16%	
Total	42	33	75	
	56%	44%	100%	

Table (7) Frequency distribution of studied caregivers according to their living with elderly patients and level of burden.

Burden categories	Living with caregiver		Total	P- value
	Yes	No		
Minimal or no burden	12	0	12	X ² =7.504 P< .057
	16%	0%	16%	
Mild burden	6	3	9	
	8%	4%	12%	
Moderate burden	33	9	42	
	44%	12%	56%	
Severe burden	12	0	12	
	16%	0%	16%	
Total	63	12	75	
	84%	16%	100%	

Discussion

Chronic kidney disease (CKD) affects the patient's lifestyle, health status, and social role. Care assistance from family members is needed, especially for patients undergoing hemodialysis. Burdens that are experienced by family caregivers include physical, psychological, and social burdens, in

addition to economic burdens such as lack of funds. Family caregivers of patients undergoing hemodialysis need social support and good interpersonal relationships (Maslakkpak et al., 2019). Support and efforts to improve the role of the caregiver in caring for can be provided through family intervention

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

programs. The family empowerment model aims to strengthen patients and other family members in order to improve the health level (Ainsworth, 2020). Therefore, the purpose of the present study was to evaluate the effect of a family-centered empowerment intervention on burden and coping strategies among caregivers of elderly patients on hemodialysis.

Regarding the distribution of caregivers according to their level of burden on pre and post intervention, the present study revealed that caregivers level of burden was reduced on post intervention as compared with pre intervention that none of them had severe level of burden on post intervention. Besides, the mean score of burden according to Zarit scale interview was decreased post intervention. This finding was congruent with Al-agamy et al., (2022). They investigated the "Effect of an Educational Intervention Based on a Family-Centered Empowerment Model on the Quality of Life of Hemodialysis Patients and Their Caregivers in Egypt." They reported that half of the studied caregivers had a moderate burden in the pre-intervention program. While more than half had a low-burden post-intervention program.

Additionally, this finding was consistent with Ali et al., (2016). They studied the "Effect of a family-centered empowerment model on hemodialysis patients and their caregivers in Tanta, Egypt." They reported that, although all caregivers obtained a severe burden level pre-empowerment intervention, on post-empowerment; none of the caregivers fell into the same category. Moreover, this result was in line with Vincencius et al., (2021). They evaluated the impact of family intervention programme on the caregiver burden of hemodialysis

patients in Indonesia. The results showed that the intervention programme used had a significant effect on changes in the levels of burden of caregivers in treating patients undergoing hemodialysis compared to pre-intervention. This result could be related to caregivers' following instructions carefully to reduce their burden and provide better care for the elderly patients.

Concerning caregivers' positive coping mechanisms before and after intervention the present study showed that the most frequently reported mechanisms of coping before and after the intervention were praying and reading the Koran. This result was consistent with Ahmed, Saif, and Hamedy, (2021). They studied "Burden and Coping Mechanisms among Caregivers for elderly adults with advanced illness in Egypt." They reported that four-fifths of caregivers used religious coping mechanisms and were praying to feel better.

Also, this finding was congruent with Abebe et al., (2022) who evaluated the Lived Experience of Primary Family Caregivers of Patients on Hemodialysis Treatment in Southern Ethiopia. They reported that faith in God and praying, talking and sharing the patient's condition and the challenges with their friends, relatives, healthcare workers, colleagues, and self-talking were the participants' coping mechanisms. This may be due to their culture and belief that praying and reading the Koran provides healing for body and soul and takes support from Allah.

The present study revealed that understanding the nature of the disease by the family, reading relevant books, and seeking medical advice helps in reducing the caregiver's burden. This finding was congruent with Alnazly, (2018), who studied the impact of an

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

educational intervention on caregivers coping outcomes in Jordan the researcher reported that the post-intervention scores indicated that the information and educational interventions had a significant positive influence on the caregivers coping outcomes compared to pre-intervention.

Besides, the findings of this study were in line with Nagarathnam et al., (2019). They studied burden, coping mechanisms, and quality of life among caregivers of hemodialysis and peritoneal dialysis undergoing and renal transplantation in India." They reported that the most frequently used positive coping strategy was wishing the problems would go away. This may be attributed to caregivers need for adjustment to stressful events while helping elderly patients and taking care of them.

Regarding the distribution of caregivers according to their reported negative coping mechanisms before and after intervention, the present study demonstrated that the most frequently reported negative mechanisms before and after intervention was preferring isolation. Conversely, sleeping longer was the least used one, both pre and post intervention. This finding was consistent with Menati et al., (2020). They studied "The Relationship between Care Burden and Coping Strategies in Caregivers of Hemodialysis Patients in Kermanshah, Iran". They found that most caregivers of hemodialysis patients use avoidance-oriented and emotion-focused strategies, e.g., social isolation and denial, which are considered inappropriate coping mechanisms. Moreover, this finding was congruent with Salehitali et al., (2018). They studied "The Role of Health Team in the Coping Process of Family

Caregivers with Patients under Hemodialysis: A Qualitative Study". They reported that many caregivers feel completely isolated in the process of treatment while most of them are sleeping for long periods. This may be as a result of withdrawal from their routines, lifestyles, responsibilities, and caregiving duties, which made them stressed.

Concerning the frequency distribution of studied caregivers according to their health problems and level of burden, the present study revealed that those who did not have health problems had a minimal or moderate level of burden. However, some caregivers who have chronic health problems reported that they have severe burden. This result was congruent with Peter, (2021) who assessed the care burden of caregivers of patients undergoing hemodialysis in India". They found that caregivers who reported social isolation, chronic health problems, and little time for self-care had more severe levels of burden than those who did not have chronic health problems.

Additionally, this result was consistent with Matthews et al., (2021). They studied "Knowledge Requirements and Unmet Needs of Informal Caregivers of Patients with End-Stage Kidney Disease (ESKD) Receiving Hemodialysis: A Narrative Review." They reported that caregiver's spouses who have health problems reported higher levels of burden compared to those who did not have any health problems that may be related to illnesses and health problems doubling their efforts to take care of their elderly patients and consequently increase their burden.

Regarding the frequency distribution of studied caregivers according to their living with elderly patients and level of burden. The current study revealed that caregivers who were living with

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

elderly patients undergoing hemodialysis had higher levels of burden than those who were not living with diseased. This finding was in line with Alshammari et al., (2021). They examined "Factors Associated with Burden in Caregivers of Patients with End-Stage Kidney Disease (A Systematic Review)". They reported that the majority of caregivers living with patients, irrespective of the relationship, experienced greater burden than others who live in a separate residence. This result could be related to increased care duties and responsibilities of caregivers for elderly patients.

Conclusion

A family-centered empowerment intervention was effective in reducing caregivers' burden among caregivers for hemodialysis patients. Observed improvement in coping strategies that can help caregivers adjust to the burden of caring.

Recommendation:

Caregivers' burden should be monitored and family empowerment interventions should be implemented to offer psychosocial support for caregivers. Problem focused coping should be encouraged as it helps in positive outcomes.

References:

Abbasi, A., Asayesh, H., Rahmani, H., Shariati, A., Hosseini, S., Rouhi, G., (2021). The burden on caregivers from hemodialysis patients and related factors. *J Res Development Nurs Midwifery*.; 8: 26–33.

Abebe, A., Arba, A., Paulos, K., Abera, W., Sidamo, T., Shiferaw, S., Abraham, Z., Baza, D., Nega, B., Woldeyohannes S. (2022). The Lived Experience of Primary

Family Caregivers of Patients on Hemodialysis Treatment in Southern Ethiopia: A Phenomenological Study. *Int J Nephrol Renovasc Dis.* 15:41-52
<https://doi.org/10.2147/IJNRD.S353191>

Ahmed, N., Saif, M., Hamedy, S. (2021). Burden and Coping Mechanisms among Caregiver for Old Adult with advanced illness. *NILES journal for Geriatric and Gerontology*, 4(2), 318-345. doi: 10.21608/niles.2021.175321

Ainsworth, M. (2020). Family Intervention. [online] [cit. 2020-n09-22]. Available at: www.neura.edu.au.

Al-agamy, H., Fouda, L., El Zeftway, A., Mohammed, N. (2022). Effect of an Educational Intervention Based on Family-Centered Empowerment Model on Quality of Life of Hemodialysis Patients and Their Caregivers. *Tanta Scientific Nursing Journal*, 26(3), 98-118. doi: 10.21608/tsnj.2022.254404

Ali, E., Alzeftawy, A., Khaton, S. E. (2016). Effect of family centered empowerment model on hemodialysis patients and their caregivers. *Journal of Nursing Education and Practice*. 6. 10.5430/jnep.v6n11p119.

Alnazly, E. K. (2018). The impact of an educational intervention in caregiving outcomes in Jordanian caregivers of patients receiving hemodialysis: A single group pre-and-posttest. *International journal of nursing sciences*, 5(2), 144–150.
<https://doi.org/10.1016/j.ijnss.2018.03.007>

***Effect of Family Centered Empowerment Intervention on Burden and Coping
Strategies among Caregivers of Hemodialysis Elderly Patients***

- Alnazly, EK., Samara, NA. (2020): The Burdens on Caregivers of Patients above 65 Years Old Receiving Hemodialysis: A Qualitative Study. Health Care Current Reviews.
- Alshammari, B., Noble, H., McAneney, H., Alshammari, F., & O'Halloran, P. (2021). Factors Associated with Burden in Caregivers of Patients with End-Stage Kidney Disease (A Systematic Review). Healthcare (Basel, Switzerland), 9(9), 1212.
<https://doi.org/10.3390/healthcare9091212>
- Asadzadeh, R., Hoseinynejad, K., Amin, F., Shamaei, S., & Nazgir, N. (2022). Kidney: Management and Treatment with Medicinal Plants According to Ethno-botanical and Ethno-veterinary Evidence. Egyptian Journal of Veterinary Sciences, Egypt. J. Vet. Sci. Vol. 53, No. 2, pp. 209-217. Retrieved from: <https://ejvs.journals.ekb.eg>
- Kazemi, A., Azimian, J., Mafi, M., Allen, K., & Motalebi, SA. (2021). Caregiver burden and coping strategies in caregivers of older patients with stroke, BMC Psychology volume 9, Article number: 51.
- Bédard, M., Molloy, DW., Squire, L., Dubois, S., Lever, JA. & O'Donnell, M. (2001). The Zarit Burden Interview: a new short version and screening version. Gerontologist. Oct; 41(5):652-7. doi: 10.1093/geront/41.5.652. PMID: 11574710.
- Centers for Disease Control and Prevention (CDC), (2021). National Diabetes Statistics Report, Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services. Columbia University Mailman School of Public Health, (2021). Egypt: Summary. <https://www.publichealth.columbia.edu/research/comparative-health-policy/library/egypt-summary>.
- Crews, D.C., Bello, A.K., & Saadi, G. (2020). Burden, access, and disparities in kidney disease. Braz J Med Biol Res. 52(3): e8338. doi: 10.1590/1414-431X20198338.
- El-Ballat, M.A., El-Sayed, M.A., & Emam, H.K. (2020). Epidemiology of End Stage Renal Disease Patients on Regular Hemodialysis in El-Beheira Governorate, Egypt. Department of Internal Medicine, Faculty of Medicine, Al-Azhar University. The Egyptian Journal of Hospital Medicine (July 2019) Vol. 76 (3), Page 3618-3625.
- El-Melegy, O., Al-Zeftawy, A., & Khaton, S. (2022). Effect of family centered empowerment model on hemodialysis patients and their caregivers. Journal of Nursing Education and Practice. Vol. 6, No. 11. Available at [:http://dx.doi.org/10.5430/jnep.v6n11p119](http://dx.doi.org/10.5430/jnep.v6n11p119).
- ElSharkawy, M., Makkeyah, Y., AbuSeif, K., Afifi, A., Khedr, E., Gohar, S., Eltayeb, M., ElShennawy, H., ElSayed, H., Sarhan, I., ElSharawy, A., Mahmoud, O., Shawky, S., AbuEleil, H., ElSaeed, H., Aref, H., Abdelmohsen, W., Bishary, W., Haleem, A., & Hosny, M. (2021). Current status of hemodialysis prescription in regular hemodialysis patients in Egypt.

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

- Nephrology Dialysis Transplantation, Volume 33, Issue suppl_1, Page i446. <https://doi.org/10.1093/ndt/gfy104.SP303>.
- Glenn, M. (2022). Effects of Aging on the Urinary Tract., MD, Duke Comprehensive Kidney Stone Center, Merck & Co., Inc., Rahway, NJ, USA.
- Himmelfarb, J., Vanholder, R., Mehrotra, R., & Tonelli, M. (2020). The current and future landscape of dialysis. *Nature Reviews Nephrology*, 16(10), 573-585. Retrived from: <https://doi.org/10.1038/s41581-020-0315-4>.
- Maslakpak, M., Torabi, M., Radfar, M., & Alinejad, V. (2019). The effect of psycho-educational intervention on the caregiver burden among caregivers of hemodialysis patients. *J Res Dev Nurs Midw* 16(1): 13–24.
- Matthews, M., Reid, J., Mckeaveney, C., & Noble, H. (2021). Knowledge Requirements and Unmet Needs of Informal Caregivers of Patients with End-Stage Kidney Disease (ESKD) Receiving Haemodialysis: A Narrative Review. *Healthcare*, 10.
- Menati, L., Torabi, Y., Andayeshgar, B., & Khatony, A. (2020). The Relationship between Care Burden and Coping Strategies in Caregivers of Hemodialysis Patients in Kermanshah, Iran. *Psychol Res Behav Manag*. Feb 5;13:133-140. doi: 10.2147/PRBM.S233103. PMID: 32104113; PMCID: PMC7008190.
- Nagarathnam, M., Sivakumar, V., & Latheef, S. (2019). Burden, coping mechanisms, and quality of life among caregivers of hemodialysis and peritoneal dialysis undergoing and renal transplant patients. *Indian journal of psychiatry*, 61(4), 380–388. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_401_18
- Noorul, A., Raja, TM., Javaid, A., et al., (2021). Evaluating Urea and Creatinine Levels in Chronic Renal Failure Pre and Post Dialysis: A Prospective Study. *Journal of Cardiovascular Disease*. 2(2): 1-4.
- Peter, E.R. (2021). Care Burden of Caregivers of Hemodialysis Patients. *Indian Journal of Applied Research*. 11. 46-48.
- Salehitali, S., Ahmadi, F., Zarea, K., Fereidooni-Moghadam, M. (2018). The Role of Health Team in Coping Process of Family Caregivers with Patients under Hemodialysis: A Qualitative Study. *Jundishapur J Chronic Dis Care*;7 (1):e63304. doi: 10.5812/jjcdc.63304.
- Seri, K., Carrero, JJ., Evans, M., et al., (2020). Major fractures after initiation of dialysis: incidence, predictors and association with mortality. *Bone*;17:115242.
- Vincencius, S., Dewi, S., & Mula, T. (2021). The impact of family intervention programs on the caregiver burden of hemodialysis patients. *Kontakt*. 23. 10.32725/kont.2021.017.
- Talebi, M., Mokhtari Lakeh, N., Rezasoltani, P. (2020). Caregiver burden in caregivers of renal patients under hemodialysis. *J Holist Nurs Midwifery*;25:59–68.
- Tejada-Tayabas, L., Partida-Ponce, K., Hernández-Ibarra, L. (2020). Coordinated hospital-home care for kidney patients on hemodialysis from the perspective of nursing

Effect of Family Centered Empowerment Intervention on Burden and Coping Strategies among Caregivers of Hemodialysis Elderly Patients

- personnel. *Revista Latino-Americana de Enfermagem*; 23(2):225-233. DOI: 10.1590/0104-1169.0058.2546.
- United States Renal Data System. (USRDS) Annual Data Report, (2020). *Epidemiology of Kidney Disease in the United States*. National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, US Department of Health and Human Services; 2020.
- University of Washington Center for Health Trends and Forecasts, (2021). *Institute for Health Metrics and Evaluation – Egypt*. Retrieved November 11, Retrived from: <http://www.healthdata.org/egypt>
- Wang, J., Yue, P., Huang, J., Xie, X., Ling, Y., Jia, L., et al., (2021). Nursing intervention on the compliance of hemodialysis patients with end- stage renal disease: A meta-analysis. *Blood Purification*; 45(1-3): 102-09.