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The perceived Stressors and Coping schemes of Geriatric Patients Undergoing Hemodialysis in Egypt

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Abstract: Background: *Adhering to the regimen of hemodialysis requires elderly individuals to cope with a countless physical and emotional unique stressors in addition to disruption in family roles and commitments. Older adults had different life experiences/backgrounds and at different developmental stage, and had much co-morbidities which make their experience with HD are completely different.*
Aim*: To identify the perceived Stressors and Coping schemes of Geriatric Patients Undergoing Hemodialysis in Egypt.*
Research design:*a cross - sectional descriptive research design was utilized*
Sampling and setting:*A convenience sample of 60 patients with a mean age of 65.1 years was recruited at 2 dialysis centers in Northern Egypt (Alexandria and El-Bohaira Governorates).*
Tools:*Data were collected using the Haemodialysis geriatric patients' Socio–Demographic and Clinical Data Structured Interview Schedule, Hemodialysis Stressor Scale and the Jalowiec Coping Scale.*
Results:*the majority of older patients are bothered to a moderate deal by the hemodialysis imposed stressors. Psychosocial stressors are more bothering than physiologic one. Limitation of physical activity (90.0%), the cost (86.75%) of treatment and tiredness (85.50%) are among the prime reported bothers. hemodialysis geriatric patients had lowered mean percent score of both coping schemes' use (36.4 %) and coping schemes' perceived effectiveness (32.9 %). Optimistic and supportive coping schemes are the essentially used and the most effective for alleviatingstressors. Significant associations were between physiologic and psychosocial types of hemodialysis stressors, inverse correlation between psychosocial stressors and the coping use and perceived effectiveness, further, positive association between coping schemes use and coping effectiveness was found.*
Conclusion:*Hemodialysis geriatric patients are moderately bothered by the hemodialysis - related stressors with the mastering of the psychosocial distresses. The coping schemes' use is higher than the coping schemes' perceived effectiveness despite both are found to be lowered. Optimistic and supportive coping schemes were the frequently used and perceived coping manner. Older adults' subjects' experienced high stress had lower coping use, the coping schemes use and its perceived helpfulness were positively connected.*
Recommendations: *The need of continuous screening for stressors of the geriatric patients throughout the course of hemodialysis treatment, in-service training program for gerontological nurses and proper support caring like stress management and financial affordable services should be provided.*
Keywords:*Coping, Geriatric Patients, Gerontological Nursing,Hemodialysis, Stressors*

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I. Introduction

Chronic kidney disease (CKD) is a predominant clinical problem in geriatric patients and is linked to greater morbidity and mortality rates. As life expectancy continues to improve worldwide, there is an accelerating prevalence of comorbidities and risk factors such as hypertension and diabetes predisposing to an extraordinary burden of CKD in the elderly population[1]. Age- related changes in the function and structure of the kidney increase the susceptibility of older adults to kidney dysfunction[2, 3]. Regardless of the age of the patient, the severity of CKD is classified according to the level of glomular filtration rate (GFR) into five stages. End stage renal disease (ESRD) is the last stage of kidney failure that occurs when the GFR is less than 15 ml/min per 1.73 m^2. At this point renal replacement therapy; of either dialysis or kidney transplantation is required[4,5]. Prevalence of ESRD among older adults is varied worldwide. According to US Renal Data System (2018) Annual Data Report, Epidemiology of Kidney Disease in the United States; US rates for ESRD (ie, dialysis or transplantation) rank among the highest in the world, and continue to rise. In 2016, there were 124,675 new cases registered as ESRD, compared to 124,111 new cases the prior year due to the high prevalence of risk factors for the disease, including an aging population, diabetes, hypertension, obesity, cardiovascular disease, and other conditions. The majority of these elderly patients are treated by hemodialysis (HD)[6,7]. Moreover, the European registry specifies that 48% of new dialysis patients are above the age of 65 years[8].Also, a high prevalence of ESRD has been documented in rural agricultural communities from Central

America, Egypt, Mexico, India and Sri Lanka.[9]According to the most recent Egyptian renal registry in 2008, the prevalence of ESRD is 483 per million population and the total recorded number of ESRD patients on dialysis is 40000 [10,11].

Since the patients with ESRD have irreversible decline in the kidneys function, those patient should undergo renal replacement therapies either in the form of hemodialysis, peritoneal dialysis,or kidney transplantation for the rest of their life to protect them from uremia and its related complications[12,13]. The outstanding rise of ESRD in Egypt, is commonly treated by HD. Hemodialysis is the most common treatment modality used among ESRD patients all over the world [14]. The same picture is seen in Egypt, as eighty nine percent of ESRD patients are on hemodialysis and are treated using about 3000 machines in just over 600 dialysis units. Hypertension is responsible for 36.6% of ESRD cases in Egypt [10,11].

Although advances in hemodialysis have contributed to improved survival of the patients with end-stage renal disease, HD may also generate, intensify, or prolong suffering in those patients. Hemodialysis exposes patients to an array of unlimited physical and psychosocial stressors, which dramatically affect their overall life domains. Hemodialysisis, a time consuming and costly treatment, imposes more restrictions for diet and fluid, and long-run dialysis that lead to loss of freedom, dependence on caregiver, disturbance of marriage, family, and social life, and lack of income. Furthermore, the patients need to take medication six to ten times per day and need to undergo dialysis sessions three times per week, each session taking about three to four hours or more[15].

In addition to the pervious stressors facing the hemodialysis patient at any age, the geriatric patients are challenged by other multiple stressors imposed by the aging process itself regardless of the disease. These include psychosocial adjustment, limited mobility, limited accessibility, visual disturbances, hearing impairments, co-morbidities, and lack of social support[16].So, specific attention should be paid for the deleterious effects of such changes on geriatric patients. Furthermore, end stage renal disease and hemodialysis are risk factors for adverse geriatric outcomes as increased mortality, hospitalizations, frailty syndrome, disability, cognitive dysfunction, falls and fall-related injuries [17].

Geriatric patients and their families have to adopt new and different supportive strategies to deal and cope with various stressors imposed by the CKD and HD. Coping is an endlesscognitive and behavioral effort to manage particular external and/or internal hassles that are appraised as exhausting or surpassing the resources of the individual [18]. Successful adaptation requires individuals to manage their emotions, adjust their thinking, and regulate their behaviors when utilizing their personal and social resources to decrease stress[19].Individuals' Coping efforts are either focused at modifying the problem (problem focused) or reducing the emotional discomfort induced by it (emotion focused). Both kinds of coping may be used to compact the demands of an event and are often used concurrently [20]. In the literature, there are eight coping mechanisms that persons use to encounter stress (confronted coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving, and positive reappraisal)[18,21]. The selection of the appropriate coping method for dealing with stressors is affected by many factors such as age, gender, existence of other diseases, personal experience, social support systems, personal beliefs, available resources and genetic background[22].

With the upward expansion in the number of older population and improvements in treatment modalities especially HD, the number of older adults diagnosed with CKD and requiring hemodialysis treatment will expand. Given the predominance of HD in the geriatric patients, it would be important to recognize how these individuals are affected by the HD imposed stressors and their management of such stressors. Older adults had different life experiences/backgrounds and at different developmental stage, and had much co-morbidities which make their experience with HD are completely different than their younger counterparties. Despite this, surprisingly, few studies were addressed stressors and coping among hemodialysis older adults. So, it is necessary to understand the types of stressors experienced and coping strategies used by geriatric population exclusively. The gerontological nurses' awareness and identification of the common physiological and psychosocial stressors facing hemodialysis geriatric patients and the frequency of coping schemes use and perceived effectiveness, will help them in developing age and culture appropriate strategies to maintain the physiological and psychological wellbeing of hemodialysis geriatric patients through adoption of useful adaptive coping methods, thus refining their quality of life.

II. Materials and Method

2.1. The aim of the study:

The present study aims to identify the perceived Stressors and Coping schemes of Geriatric Patients Undergoing Hemodialysis in Egypt.

2.2. Research Questions:
To fulfill the aim of the study, the following questions were formulated:
Q1: What are the level (degree) and the most common types of hemodialysis- related stressors as perceived by the geriatric hemodialysis patient?
Q2: What are the common schemes of coping employed by the geriatric hemodialysis patients?
Q3: What is the perceived helpfulness of the used coping schemes among geriatric hemodialysis patient?
2.3. Research Methodology
2.3.1. Research design:
The selected design for the current study is a cross - sectional descriptive research design.
2.3.2. Sample:

Sample of convenience of 60 participants was recruited for the conduction of this study (based on the program Epi info 7 which was used to estimate the sample size based on the statistical parameters using 5% possible allowable error and the confidence co-efficient 94%). The sample was collected according to the following criteria: male and female elderly persons aged 60 years and older, undergoing hospital hemodialysis for at least 6 months, and agree to participate in the study were included in the study.

2.3.3. Setting:

The study conducted at two hemodialysis units: (1) At Sharq El Madina hospital in Alexandria that affiliated to the specialized medical center of the ministry of health and population, Alexandria, Egypt. This unit consists of 4 rooms, including one room for hemodialysis patients with hepatitis C virus while the other one for patients with hepatitis B virus. It works two shifts per day, and provides medical care for all patients including older adults (29 in number). (2) At the National Medical Institute in **Damanhur city** that affiliated to The General Authority for Hospitals and Educational Institutes of the Ministry of Health and Population, Al Buhayrah, Egypt. This unit consists of 5 rooms, including one room for hemodialysis patients with hepatitis C virus. It works 3 shifts per day, and provides medical care for different age groups of patients which included [31] older adult patients. Both hospitals provide the care for health insurance, ministry of health, and country-funded medical treatment patients.

2.3.4. Tools:
Data were collected using Socio–Demographic and Clinical Data Structured Interview Schedule, Hemodialysis Stressor Scale and Jalowiec Coping Scale.

(I) Haemodialysis geriatric patients' Socio–Demographic and Clinical Data Structured Interview Schedule: Developed by the investigator based on the review of relevant literature to gather the sociodemographic data and medical health history of the studied geriatric patients such as age, sex, marital status, educational level, and income while clinical data contained duration of hemodialysis treatment, presence of chronic diseases and the consumed medications.

(II) Hemodialysis Stressor Scale (HSS): This scale was developed by Baldreeet al. (1982) to measure the level of stress experienced by hemodialysis patients. It comprises 32 items which displays two stressors subscales; (1) Psychosocial subscale consists of 25 items such as restrictions of food and fluids and decrease in social life, and (2) Physiological subscale included 7 items as muscle cramps and fatigue. The Participants rated the extent to which they were bothered by each item using a four-point Likert scale ranging from 1 (not at all) to 4 (a great deal). The range of possible scores was 1-4, with higher scores representing a higher intensity of stressor. Two items from the psychosocial subscale were excluded from the analyses because they were not applicable to older adults, which include "Interference with the job and Decreased ability to have children".

(III) Jalowiec Coping Scale: This scale was designed by Jalowiec (1995) to assess the type and perceived effectiveness of coping strategies used by haemodialysis geriatric patients. It consisted of 60-items denoting eight coping strategies; Confrontive strategy (10 items); Evasive (13 items); Optimistic (9 items); Fatalistic (4 items); Emotive (5 items); Palliative (7 items); Supportive (5 items); and Self-Reliant (7 items). The geriatric Participants responded to each item/statement in two parts: (a) frequency of use and (b) perceived usefulness, on a four-point Likert scale ranging from 1 (never used/not useful) to 4 (always used/very useful), with higher scores showing a higher level of use and usefulness of coping strategies. Two items were excluded from the analysis of the coping scale because they are culturally inappropriate:" drink alcohol to make yourself feel better (item 34)and got mad let off steam(item 8) "

2.3.5. Methodology

1. Official letters were issued from the Faculty of Nursing, Alexandria University to the administrators of the study settings to obtain their permission to carry out the study after explaining the purpose of the study. Then, a written approval to carry out the study was obtained from the hospital responsible authorities at the

previous mentioned settings. Lastly, the heads of the two hemodialysis units was informed about the purpose of the study, the date and the time of starting data collection.

2. Tool I (Hemodialysis geriatric patients' Socio–Demographic and Clinical Data Structured Interview Schedule) was developed by the researcher based on the review of relevant literature to collect the socio-demographic and clinical data of the study subjects.
3. Tool II (Hemodialysis Stressor Scale) and Tool III (Jalowiec Coping Scale) were translated into Arabic by the researcher and were tested for content validity by five experts in the related fields of gerontological nursing and Medical Surgical Nursing. No modifications were recommended.
4. The reliability of tool II and III was tested by using Alpha Cronbach's statistical test for internal consistency of tool items. Alpha Cronbach's reliability of tools was (0.87 for tool II, and 0. 80 for tool III).
5. A pilot study was carried out on (6) older adults selected from a setting not included in the study (The Medical research institute hospital) to assess the applicability, clarity and feasibility of the study tools, and necessary modifications were done accordingly.
6. Each elderly who fulfills the inclusion criteria was interviewed individually in the hemodialysis unit during the hemodialysis session in order to collect the necessary data
7. Over a period of 3 months from the beginning of June to the end of august 2018, data was collected.

Ethical considerations:-A written approval was obtained from the hospital responsible authorities at the previous mentioned settings to conduct the current study. All subjects were informed that participation in the current study is elective, and the data collected will be used only for research purpose, and anonymity and confidentiality of each participant was protected by allocation of a code number for each response. The participants were informed that they can leave at any time during the study without giving reasons.

Data management and analysis:-

Data was analyzed using statistical package for social science (SPSS) version 20. Numerical data were expressed as mean ± SD and mean percent score. Qualitative data were expressed as frequency and percentage. For quantitative data, comparison between two variables was done using Student t-test and comparison between more than two variables was done using F-test (ANOVA). To correlate between two normally distributed quantitative variables, Pearson coefficient was used. Probability (P-value) less than 0.05 was considered significant and less than 0.01 was considered as highly significant.

III. Results

According to Table 1, being a male (58.3%) with a mean age of 65.1±5.7 years old, inhabitants of rural areas (51.7%), financially unsupported (91.7%), married (65.0%) and illiterate (31.7%) draw the main socio-demographic features of the hemodialysis geriatric patients involved in the study. Considering the clinical data, all the chronically ill kidney diseased geriatric patients attended the hemodialysis unite three times per week with a mean duration of treatment of 6.3 ± 5.5 years. Hypertension was the mainly reported co-morbid condition (73.3%) by the end-stage renal disease geriatric patients.

Table (1): Distribution of the studied hemodialysis geriatric patient according to their socio-demographic information and clinical features

Socio-demographic and clinical characteristics	Studied geriatric patient (n=60)	
	Frequency	%
Sex		
• Male	35	58.3
• Female	25	41.7
Age (Years)		
60-	48	80.0
70-	9	15.0
80+	3	5.0
Mean ±SD	65.1±5.7 Years	
Marital status		
Married	39	65.0
Widowed	17	28.3
Single	4	6.7
Educational level		
Illiterate	19	31.7
Read and write	5	8.3
Basic education	12	20.0
Secondary education	14	23.3
High education	10	16.7
Occupation before retirement		
Housewife	21	35.0

Employee	20	33.3
Skilled worker	19	31.6
Monthly income		
Enough	5	8.3
Not enough	55	91.7
Place of residence		
Urban	29	48.3
Rural	31	51.7
Duration of treatment		
Less than 5 years	32	53.3
5 to less than 10 years	13	21.7
10 years and more	15	25.0
Mean ±SD	6.3 ± 5.5 Years	
Co-morbid condition#		
No	5	8.3
Hypertension	44	73.3
Diabetes Mellitus	19	31.7
Heart diseases	14	23.3
Others	11	18.3

Multiple response

As shown in Table 2, the majority of current study older patients (75%) are bothered to a moderate deal by both the psychosocial and physiological discomforts of hemodialysis with a total mean percent score of stress intensity of 55.4 %. Psychosocial troubles are reported to be the prime origin of stress for hemodialysis geriatric patients with a mean percent score of 60.7% followed by physiologic one (42.1%).

Table (2): Distribution of the studied hemodialysis geriatric patients according to subscales of hemodialysis stressor scale (HSS)

Stress	Not at all		Little deal		Moderate deal		A great deal		No items	Maximum of allowed scores	Mean ± SD	Mean %
	No	%	No	%	No	%	No	%				
Psychosocial	0	0.0	10	16.7	46	76.7	4	6.7	23	92	60.7±9.9	66.0
Physiological	8	13.3	41	68.3	8	13.3	3	5.0	7	28	11.8±4.0	42.1
Total Stress Level	**0**	**0.0**	**15**	**25.0**	**45**	**75.0**	**0**	**0.0**	30	120	70.9±12.3	59.1

Assessment of hemodialysis stressors items in **Table 3** elucidates that, feeling of tiredness (85.50%) and loss of body function (83.75%) are the main physiologic hassles of this stressful treatment.Talking about the psychosocial strains, limitation of physical activity (90.0%), the cost (86.75%) and length (82.5%) of treatment, in addition to, decrease in sexual derive (82.0%), social life (81.75%) and transportation burden (80.5%) are mostly scored by geriatric patients subjected to the hemodialysis line of treatment.

Table (3): Mean, standard deviation, and mean percent scores of the hemodialysis stressor scale (HSS) items for geriatric hemodialysis patients.

hemodialysis stressor scale (HSS) items	Not at all		Little deal		Moderate deal		A great deal		NA		Mean ± SD.	% Mean Score
	No.	%	No.	%	No.	%	No.	%	No.	%		
1- Physiological												
7. feeling tired	5	8.3	4	6.7	12	20.0	39	65.0	0	0.0	3.42 ± 0.94	85.50
8. loss of body function	2	3.3	6	10.0	21	35.0	31	51.7	0	0.0	3.35 ± 0.80	83.75
6. stiffening of joints	16	26.7	5	8.3	10	16.7	29	48.3	0	0.0	2.87 ± 1.28	71.75
3. muscle cramps/soreness	11	18.3	7	11.7	22	36.7	20	33.3	0	0.0	2.85 ± 1.09	71.25
4. itching	19	31.7	8	13.3	12	20.0	21	35.0	0	0.0	2.58 ± 1.27	64.50
1.arterial & venous stick	32	53.3	1	1.7	11	18.3	16	26.7	0	0.0	2.18 ± 1.33	54.50
2.nausea and vomiting	38	63.3	8	13.3	9	15.0	5	8.3	0	0.0	1.68 ± 1.02	42.0
2- Psychosocial												
14. limitation of physical activity	3	5	1	1.7	13	21.7	43	71.7	0	0	3.60 ± 0.76	90.0
22. cost of treatment/transportation to treatment/or other cost factors	6	10	2	3.3	10	16.7	42	70	0	0	3.47 ± 0.96	86.75
5. length of treatment	11	18.3	2	3.3	5	8.3	42	70	0	0	3.30 ± 1.18	82.5
13. decrease in sexual drive	5	8.3	1	1.7	11	18.3	22	36.7	21	35	3.28 ± 1.02	82
9. decrease in social life	5	8.3	6	10	17	28.3	32	53.3	0	0	3.27 ± 0.95	81.75
23. transportation to and from the unit	11	18.3	5	8.3	4	6.7	40	66.7	0	0	3.22 ± 1.21	80.5
31. boredom	16	26.7	4	6.7	7	11.7	33	55	0	0	2.95 ± 1.31	73.75

15. sleep disturbances	16	26.7	6	10	14	23.3	24	40	0	0	2.77 ± 1.24	69.25
16. changes in family responsibilities	15	25	8	13.3	21	35	16	26.7	0	0	2.63 ± 1.13	65.75
24. limits on time and place for vacations	25	41.7	3	5	7	11.7	25	41.7	0	0	2.53 ± 1.40	63.25
18. reversal in family roles with the children	19	31.7	12	20	19	31.7	10	16.7	0	0	2.33 ± 1.10	58.25
17. reversal in family role with spouse	12	20	10	16.7	13	21.7	5	8.3	20	33.3	2.28 ± 1.04	57
11. limitation of fluid	33	55	4	6.7	10	16.7	13	21.7	0	0	2.05 ± 1.27	51.25
10. limitation of food	36	60	3	5	13	21.7	8	13.3	0	0	1.88 ± 1.17	47
30. feelings related to treatment (example: feeling cold)	31	51.7	13	21.7	12	20	4	6.7	0	0	1.82 ± 0.98	45.5
20. changes in body appearance	30	50	18	30	6	10	6	10	0	0	1.80 ± 0.99	45
19. uncertainty about the future	42	70	5	8.3	9	15	4	6.7	0	0	1.58 ± 0.98	39.5
26. dialysis machine and/ or equipment	42	70	7	11.7	7	11.7	4	6.7	0	0	1.55 ± 0.95	38.75
21. limited in styles of clothing	45	75	7	11.7	2	3.3	6	10	0	0	1.48 ± 0.97	37
25. frequent hospital admissions	47	78.3	5	8.3	5	8.3	3	5	0	0	1.40 ± 0.85	35
27. dependency on nurses and technicians	47	78.3	4	6.7	8	13.3	1	1.7	0	0	1.38 ± 0.78	34.5
28. dependency on physicians	46	76.7	7	11.7	6	10	1	1.7	0	0	1.37 ± 0.74	34.25
29. fear of being alone	49	81.7	6	10	4	6.7	1	1.7	0	0	1.28 ± 0.67	32

Table 4 signifies lowered mean percent score of both coping schemes' use (36.4 %) and coping schemes' perceived effectiveness (32.9 %) of hemodialysis geriatric patients toward the dual types of the hemodialysis-imposed stressors. Optimistic (54.1%) and supportive (53.3%) coping schemes were the essentially either to be used or to be considered the most effective (52.9, 52.7% respectively) for alleviating stressors. The least used (25%) and perceived ineffective (11.7%) was the emotive coping manner.

Table 4: Mean, standard deviation, and mean percent scores of the coping schemes' use and coping schemes' effectiveness among hemodialysis geriatric patients.

Jalowiec coping scale	Number of Items	Maximum allowed scores	Mean ± SD	Mean % scores
a- The coping schemes' use				
3. Optimistic	9	27	14.6±5.7	54.1
7. Supportive	5	15	8.0±2.6	53.3
4. Fatalistic	4	12	4.3±2.4	35.8
8. Self –reliant	7	21	6.4±3.8	30.5
6. Palliative	6	18	5.4±3.4	30
1. Confronting	10	30	8.1±7.2	27
2. Evasive	13	39	10.5±4.2	26.9
5. Emotive	4	12	3.0±1.9	25
Total coping use	**58**	**174**	**63.3±22.2**	**36.4**
b- The coping schemes' effectiveness				
3. Optimistic	9	27	14.3±6.1	52.9
7. Supportive	5	15	7.9±3.0	52.7
6. Palliative	6	18	5.3±3.6	29.4
4. Fatalistic	4	12	3.5±2.0	29.2
8. Self –reliant	7	21	5.7±4.1	27.1
1. Confronting	10	30	7.9±7.3	26.3
2. Evasive	13	39	10.0±5.8	25.6
5. Emotive	4	12	1.4±1.4	11.7
Total coping effectiveness	**58**	**174**	**57.2±22.7**	**32.9**

Table 5 makes clear a positive statistically significant association between physiologic and psychosocial types of hemodialysis stressors(r= 0.428**). It also conveys a significant negative correlation between psychosocial stressors from side and the coping use (-0.351**) and perceived effectiveness (-0.268*) from the other side, making intelligible of inverse relation between them. Identically, another significant negative correlation (r= -.261*) between the stress level and coping schemes use of hemodialysis older patients is found, which means that older adults subjects who experience high stress had lower coping use. On the same line, a negative but not significant (r= -.170) correlation was emerged between the stress level and the perceived coping schemes' effectiveness. Dissimilarly, an observed strong positive association was generated between the coping schemes use and perceived coping schemes' effectiveness, explaining that the higher use of certain coping scheme is owed to its perceived effectiveness.

Table 5: The correlation between stress level, coping schemes' use and coping schemes' effectiveness among hemodialysis geriatric patients

Correlations		Correlations				
		Coping Use	**Coping effectiveness**	**Physiological stressors**	**Psychosocial stressors**	**Overall Stress Level**
Coping Use	Pearson Correlation	1	.815**	-0.191	-0.351**	-.261*
	Sig. (2-tailed)		.000	0.143	0.006	.044
Coping effectiveness	Pearson Correlation	.815**	1	-0.112	-0.268*	-.170
	Sig. (2-tailed)	.000		0.393	0.039	.195
PhysiologicalStressors	Pearson Correlation	- 0.191	-0.112	1	0.428**	0.879**
	Sig. (2-tailed)	0.143	0.393		0.001	0.00
PsychosocialStressors	Pearson Correlation	-0.351**	-0.268*	0.428**	1	0.695**
	Sig. (2-tailed)	0.006	0.039	0.001		0.000
Overall Stress Level	Pearson Correlation	-.261*	-.170	0.879**	0.695**	1
	Sig. (2-tailed)	.044	.195	0.000	0.000	
Significance	**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).					

With reference to **Table 6**, a relation between the level of stress and the sex, work before retirement and place of residence of study participants is found, where female elders, housewives and urban residents had experienced the highest stress levels and the difference between items was statistically significant. Additionally, higher educated geriatric patients with enough income demonstrated higher coping effectiveness with significant relations (P=0.043* and p= 0.035* respectively). Employees had the highest use of coping schemes and the difference was statistically significant (P=0.040*).

Table 6: The relationship between socio-demographic characteristics, stress level and coping use & perceived effectiveness

socio-demographic characteristics	Stress levels Mean % ± SD	Test of sig.	perceived coping effectiveness Mean % ± SD	Test of sig.	Coping use Mean % ± SD	Test of sig.
Sex						
Male	55.1±11.7	t = 2.930*	60.6±22.9	t = 1.391	66.1±25.8	t = 1.144
Female	63.5±9.7	P = 0.004*	52.4±21.9	P = 0.170	59.4±15.4	P = 0.257
Educational level						
Illiterate	60.8±13.6		46.9±16.8		55.3±18.9	
Read and write	60.0±7.2	F:0.532	52.0±19.5	F:2.482	52.0±17.3	F:1.772
Basic education	59.8±12.2	P:0.751	57.3±26.2	P:0.043*	65.5±12.5	P:0.134
Secondary	57.3±10.8		61.1±25.8		67.8±25.8	
University/Post	54.8±10.3		71.2±15.5		73.0±29.3	
Place of residence						
Urban	62.7±10.1	t = 2.749*	58.6±19.7	t = 0.456	65.4±18.3	t = 0.693
Rural	54.8±11.8	P = 0.008*	55.9±25.4	P = 0.644	61.4±25.4	P = 0.491
Type of work before retirement						
Non-professional work	56.5±13.2	F: 3.187	53.4±17.6	F:2.407	58.8±16.6	F:2.705
Housewife	65.2±8.8	P:0.020*	54.5±21.7	P:0.060	60.4±16.1	P:0.040*
Employee	55.6±11.4		61.0±24.4		67.1±24.3	
Income						
Enough	50.6±5.6	t = 1.638	77.6±15.2	t = 2.155*	79.2±11.2	t = 1.694
Not enough	59.4±11.7	P = 0.107	55.3±22.4	P = 0.035*	61.9±22.4	P = 0.096
Duration of treatment						
Less than 5 years	58.5±11.0	F = 0.607	56.2±23.3	F =0.251	62.5±24.2	F =0.206
5 to less than 10 years	61.5±13.8	P = 0.549	55.7±15.5	P =0.779	61.7±14.4	P =0.814
10 years and more	56.6±11.4		60.9±27.5		66.5±24.1	

IV.Discussion

This important study was implemented to explore stressors experienced by older adults' hemodialysis patients and coping schemes used. It confirmed the major suffering areas of this specialty and age-specific coping styles in comparable with other concerning studies. It additionally added one of the important factors of these strategies, didn't investigated before in other studies, which determined the degree of effectiveness and helpfulness of coping used. This together with study results indicates that teaching different coping mechanisms should be an integrated aspect of care for dialysis geriatric patients. Unfortunately, literature in this regard, specific for geriatric patients receiving hemodialysis, is still limited and inconsistent in results. For example,

studies often concerned with young adults or not interested in age-related differences, nor educational interventions of suitable coping behaviors, leaving these older adults suffered and complained.

In the current work, coping in relation to either dialysis-related physiological or psychosocial stressors were also weighed against each other, indicating that psychosocial stressors are more threatening for the geriatric patients ability to cope with non-available resources. Accordingly, the right anticipation figure is the outstanding use of coping methods toward the psychosocial disquiets, unexpectedly, lowered use of coping schemes was found.

The whole picture of HSS assessment reflects that, the majority of the current study geriatric patients felt distressed by the hemodialysis-imposed limitations to a moderate deal and only fewer percentages were distressed to a great deal . According to Lazarus and Folkman theory of coping to stress 1984 [18], the timing of an event in the life span may impact person's evaluation of that event. Assuming this, older adults may consider renal failure and dialysis treatments as an age-appropriate disorder and thus, find the event to be less disturbing comparing to younger adults [25].In the same context, the extent to which older adults had experienced extremely stressful events, such as the death of loved ones, made everyday difficulties subtle in comparison[26]. Moreover, such results may be religiously oriented as their faith in God (Allah) may derive acceptance and satisfaction with the disease process and treatment. Further, the lengthier duration of treatment (the mean duration of hemodialysis =6.3 ± 5.5 years) often considered a crucial determinant in perceived stress, which render patients get used to hemodialysis long-term restrictions, consequently lessen the amount and troublesomeness of challenged stressors over time. The finding of Juliana &Arjunan in India 2015 [27]share the similar view, who found that, all of the older participants in their study were slightly troubled by the hemodialysis related-stressors.

In this study, psychosocial types of stressors were the most upset than physiologic stressors type. Although it is not a norm to find that the psychosocial stressors the most bothersome type than those of physiologic one, but such finding may be particularly true for older population for many reasons. Primarily, all older adults passed through many age- associated psychosocial consequences of retirement, restricted financial resources, and losses; mainly that of independence and being relying on others. Second, some psychological and social burden of being a hemodialysis geriatric patient are considered out of control conditions and go beyond the patient's coping ability such as transportation, treatment cost, economic burden and others, which elevated the burden curve of these stressors. Adding to these, are the burden of the other accompanying illnesses and treatments. Not all studies share the similar view. Likewise, shahrokhi et al (2014)[22] and Parvan et al (2010)[28] indicated that hemodialysis-related psychosocial stressors are more bothering than physiologic stressors. However; Elgamal and Saleh (2019)[29] and Tu et al. (2013)[30] reported that hemodialysis patients had physiological stressors than psychosocial. Different age may explain the discrepancy between findings of the studies, as in the current study, aging process itself imposes multiple psychosocial stressors alongside those imposed by hemodialysis. For example, stressors related to transportation to and from the hemodialysis unit and cost of treatment may be exaggerated by changes in economic status associated with retirement; this is also confirmed by the finding of inadequate monthly income of the majority of current study participants.

The most frequently reported psychosocial stressors by this study hemodialysis geriatric patients were; limitation of physical activity, cost of treatment/transportation to treatment/or other cost factors, length of treatment, decrease in sexual drive, decrease in social life and transportation to and from the unit respectively. Consistent with these findings, decrease of social life and limitation of physical activity were among the most common signed stressors in the work of Logan (2006)[20] and Lok (1996)[31], change in social life was ranked the fifth by Shahrokhy (2014[22]). A limit on time and place for vacation was the highest annoyed stressor in other researches done by Ahmed and Alnazly (2014) and Shahrokhy (2014), logan (2006)[20-22]. Unlike other studies, nearly one half of the present study participants considered food and fluid restrictions as part of hemodialysis treatment stressors, which is a little percentage compared with other studies. The other half of participants reported that these restrictions did not imply any source of stress and no need to follow it as they believed that their bodies will get rid of waste products through hemodialysis, although, inability to follow restrictions may compromise the disease process and expose them to life threatening complications. Similar findings were obtained by other researchers [20,32].

In the present study, the most commonly irritated physiologic stressors were feeling tired and loss of body functions, however, nausea and vomiting and arterial & venous stick were the least reported. In the studies carried out by Johnson 2017, Shahrokhi (2014) and Logan (2006)[20,22,33], the most experienced physiologic trouble was fatigue. Similary, feeling tired was rated as one of the first five felt stressors in the work of Issa (2015) [34]. Feeling tired or fatigue in patients with chronic kidney disease may result from failure of the kidney to produce Erythropoietin, a hormone responsible for stimulating the bone marrow to produce red blood cells, which bring oxygen to the cells [25]. Furthermore, hemodialysis necessitates the patient to be attached to the dialysis machine three times per week, each cession taking about three to four hours or more which is very exhausting for an older adult with an age- related loss of stamina.

The positive association between physiologic and psychosocial types of hemodialysis related stressors (Table 5) beside those imposed by the aging process, embodies a probable hazard to the older adult's independent living. As lack of energy, may hinder their ability to engage in physical activity or social life.

Unexpectedly, higher psychosocial stressors are associated with lower coping schemes use and lower perceived coping effectiveness (Table 5). Limited use of coping method in older adults may be related to the age related physical and psychosocial changes which may influence disease progression and accelerate complications, thus outstand the geriatric patients coping abilities and resources. Additionally, along life span, older population were subjected to a countless range of problems, and expectantly through this process they have learned which kinds of coping schemes are ineffective, and which styles can accomplish their objectives in different circumstances.. In the same line, a study done in India 2015 [27]publicized that, 63.3 percent of the study participants were never had coping. Adding to this, Parvan et al (2015)[35] also, found that advanced age in patients treated with hemodialysisis significantly associated with lowered use of coping strategies.

As represented in this work, optimistic and supportive schemes are the essentially used and perceived effective coping schems in the work ofElgamal and Saleh (2019)[29]. Optimistic coping scheme involves ways such as keeping a sense of humor, seeing the good side of the situation, keeping the life as normal as possible and think positively. This finding is reinforced with other researches carried out by logan et al (2006) and Shahrokhi et al (2014) [20,22]. The supportive coping scheme implies accepting and looking for support from various entities and sources [34]. It is the secondly most used and helpful scheme among the current study participant. It includes praying or put the trust in God and being involved in support groups or talking with professional persons as nurses/physicians, or family member or friend. The gained professional support from medical staff can be one way and key element to ease their treatment-related distress and reduce feelings of vulnerability. As the least stressful scale items involved; dependency on nurses & technicians and dependency on physicians (Table 3). This finding may be the outcome of the developed familiar relations between the hemodialysis patients and the staff of the dialysis unit which arise from longer duration of treatment. Consistent results were introduced in Palestine 2015 [34]. In contrast, A study done in India 2014, found that 86.7% 0f patient 's stressors are caused by dependency on staff [36].

What mentioned here with fingertips is that, positive association was generated between the coping schemes use and its perceived effectiveness, clearing up that the higher use of certain coping scheme is being in arrears to its perceived effectiveness. Also, the mean percent score for the use of coping schemes was greater than that for perceived effectiveness or helpfulness of the coping scheme, which indicates that although participants used some of the coping strategies they did not perceive them to be as helpful. This outcome result is very important because most of the previous studies used to measure the use of coping styles only. Similar findings were obtained in Canada 2006[20]. In the same line, Lazarus and Folkman (1984)[18] emphasized that, the success of certain coping strategies are determined by the helpfulness of whatever strategies are used within the context of an event.

Female elders, housewives and urban residents had experienced the highest stress levels as declared by current study and the difference was statistically significant. These findings are supported by those of Ahmed and Alnazly (2014)[21] and Yen et.al (2009)[37] who cited that older female patients reported greater hemodialysis related-stressors. In the Egyptian society, the female housewives are responsible for doing house chores like cooking and other social roles with family and friends, so inability to accomplish such responsibilities may intensify their stress feelings. Higher stress level among urban participants in this study, may be due to decreased social support system as they live in nuclear families as compared with rural residents who live in an extended one.

Moreover, geriatric participants with high education and enough income demonstrated higher coping effectiveness with a statistically significant relation. These factors may act as supportive resources for increasing the effectiveness of the coping method. These findings are supported by the finding of Ahmed and Alnazly in 2014[21]. Congruent with other research findings, no statistically significant relations were detected in the present work between the use of the coping scheme and age or gender [22,28,34] or any of the other selected socio-demographic variables except for the type of work before retirement, where employees had the highest use of coping scheme. Further researches with larger sample size and concerning with older adults may be required to elucidate more relations and coping responses. Such knowledge will assist gerontological nurses in developing age-appropriate strategies for promoting optimum wellness for such patients.

V.Conclusion:

The current study found those geriatric patients subjected to hemodialysis are bothered to a moderate degree by the hemodialysis - related stressors with the mastering of the psychosocial distresses. Limitation of physical activity, the cost of treatment and transportation and tiredness are among the main reported complaints. The coping schemes' use is higher than the coping schemes' perceived effectiveness despite both are found to be lowered. Optimistic and supportive coping schemes were the frequently used and perceived as the mostly effective for alleviating discomforts, while the emotive coping manner is the least encountered. Unexpectedly,

older adults' subjects' experienced high stress had lower coping use, and astrong positive association was found between the coping schemes use and its perceived helpfulness. Finally, certain sociodemographic information was linked with high stress (eg;:female elders and urban residents), and other with high coping response (eg; higher education and enough income).

Recommendations

1- Regular Assessment of hemodialysis geriatric patients daily livings' experiences, learning needs, stress levels, and frequency of coping use and its perceived effectiveness should be scheduled by the gerontological nurse at the hemodialysis unit using specialized screening methods.
2- Formulate tailored interventions, provide day to day support, information, alternative solutions and counseling services that address the hemodialysis geriatric patients' disquiets related to treatment especially psychosocial one in order to utilize better problem solving approaches and achieve valuable coping schemes.
3- An in-service education program can be organized for nurses working with older adults in the hemodialysis units to increase their awareness about the hemodialysis-related stressors, the impact of ageing process on stress and coping level, and effective stress management via adaptive coping styles.
4- Collaboration between the responsible authorities to save financial resources to meet the un-afforded costs of treatment and transportation for those burdened hemodialysis geriatric patients.

References:

[1]. M. Mallappallil, E. Friedman, B. Delano, S. McFarlane and M. Salifu, Chronic kidney disease in the elderly: evaluation and management, Clinical Practice, 11(5),2014, 525–535.
[2]. L. Stevens and A. Levey, Chronic kidney disease in the elderly-how to assess risk, The New England Journal of Medicine, 352(20),2005, 2122-2124.
[3]. A. Levey, J.Coresh, E.Balk,A.Kausz,A.Levin,M.Steffes, andG. Eknoyan, Practice guidelines for chronic kidney disease: evaluation, classification, and stratification, Annals of Internal Medicine, 139(7),2003, 137-605.
[4]. S. Meiner,Gerontologicalnursing 4thed(USA: Mosby com., 2011) 554-559.
[5]. K. Osborn, C. Wraa, andA.Watson.Medical-surgical nursing: preparation for practice(USA: Pearson com., 2010) 1475-1490.
[6]. R. Saran, B. Robinson, K. Abbott, L. Agodoa, J. Bragg-Gresham, R. Balkrishnan, ……..and V. Shahinian, US Renal Data System 2018 Annual Data Report: epidemiology of kidney disease in the United States,American Journal of Kidney Diseases, 73(3), 2019, 1 -772.
[7]. H. Abdelrahman, A. Elawam, and A. Alghitany, Cognitive Impairment among Egyptian Older Adults on Hemodialysis, Middle East Journal of Age and Ageing, 11(3), 2014, 18-24.
[8]. ERA-ADTA Registry. ERA-EDTA registry 2005 annual report (Amsterdam, the Netherlands: Department of Medical Informatics, Academic Medical Center, 2007).
[9]. 2013 USRDS annual data report. Available at: http://www.usrds.org/adr.aspx. Retrieved on August 26,2018.
[10]. Data from Registered Egyptian Society of Nephrology and Transplantation 2010.
[11]. K. Mahmoud, H. Sheashaa, and A. Gheith A. Peritoneal dialysis in the developing world.Peritoneal Dialysis International, 30, 2010, 269–273 .
[12]. J. Hinkle, and K. Cheever. Brunner and Suddarth's textbook of medical-surgical nursing. 13th ed. (Philadelphia: Wolters Kluwer com., 2014) 1535-1559.
[13]. L. Stevens, G. Viswanathan, and D. Weiner, CKD and ESRD in the Elderly: Current Prevalence, Future Projections, and Clinical Significance, Advances in Chronic Kidney Disease, 17(4), 2010, 293–301.
[14]. 2015 USRDS Annual Data Report Volume 1: ESRD in the United States.
[15]. E. Shdaifat, and M. Abdul Manaf, Quality of Life of Caregivers and Patients Undergoing Haemodialysis at Ministry of Health, Jordan, International Journal of Applied Science and Technology, 2(3), 2012: 75-85.
[16]. Swidler M. Chapter 37. Dialysis decisions in the elderly patient with advanced CKD and the role of nondialytic therapy. In: American Society of Nephrology Geriatric Nephrology Curriculum. American Society of Nephrology (2009).
[17]. National Center for Chronic Disease Prevention and Health Promotion.National Chronic Kidney Disease Fact Sheet, 2014.
[18]. R. S. Lazarus,and S. Folkman. Stress, appraisal and coping(New York: Springer) 1984.
[19]. B. Campas, J. Connor-Smith, H. Saltzman, A. Thomsen, and M. Wadsworth, Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research, Psychological Bulletin, 127(1), 2001, 87-127.
[20]. S. Logan, M. Pelletier-Hibbert, and M. Hodgins, Stressors and coping of in-hospital haemodialysis patients aged 65 years and over, Journal of Advanced Nursing, 56(4), 2006, 382-91.
[21]. M. M. Ahmed, andE. K. Al Nazly. Hemodialysis: Stressors and coping strategies,Psychology, Health & Medicine, 20(4), 2014, 477-487.
[22]. Z, Shahrokhi, M. Rayyani, S. Sabzevari, and A. Haghdoost, Stressors and Coping strategies in dialysis patients, Iranian Journal of Critical Care Nursing, 7(3), 2014, 184-193
[23]. K. Baldree, S. Murphy, andM. Powers, Stress identification and coping patterns in patients on hemodialysis, Nursing Research, 31(2), 1982, 107- 12.
[24]. A. Jalowiec (1995) Psychometric results in Issa, (2015). Stressors and Coping Strategies amongst Hemodialysis Patients in North of West Bank, Published Master Thesis, Community Mental Health Nursing, Faculty of Graduate Studies, An-Najah National University, Nablus, Palestine.
[25]. S. Logan. Stressors and coping of hospital hemodialysis patients age 65 years and over. Published Master thesis, Graduate Academic Unit, New Brunswick University, Canada, 2004.
[26]. C. Aldwin, K. Sutton, G. Chiara, and A. Spiro, Age Differences in Stress, Coping, and Appraisal: Findings From the Normative Aging Study, Journal of Gerontology: PSYCHOLOGICAL SCIENCES, 51(4), 1996, I79-88.
[27]. M. Juliana, and P. Arjunan, Stress and Coping among Indian Haemodialysis Patients, International Journal of pharmacy and biological sciences, 5(4), 2015, 18-23

[28]. K. Parvan, M. Qvjazadeh, and R. Ahangar, Stressors and coping methods in peritoneal dialysis patients, Journal ofNurs Spring, 5(17), 2010, 34-41.
[29]. S. Elgamal, and R. Saleh, Assessing the Physiological, Psychological Stressors and Coping Strategies among Hemodialysis Patients in the Kingdom of Saudi Arabia. World Academy of Science, Engineering and Technology, International Journal of Nursing and Health Sciences, 13(2), 2019, 69-73
[30]. H.Y. Tu, J.H. Shao, F.J. Wu, S.H. Chen,Y. H. Chuang, Stressors and coping strategies of 20-45-year-old hemodialysis patients,Collegian21, 2014, 185-192.
[31]. P. Lok, Stressors, coping mechanisms and quality of life among dialysis patients in Australia, Journal of Advanced Nursing, 23(5), 1996, 873-81
[32]. E. Al Nazly, M.Ahmad, C.Musil, and M. Nabolsi, Hemodialysis stressors and coping strategies among Jordanian patients on hemodialysis: A qualitative study,Nephrology Nursing Journal, 40(4), 2013, 321-327.
[33]. S. Johnson. Cognitive appraisal of stress and coping of intradialytic events in persons on hemodialysis, Published Ph.D thesis, Faculty of nursing, East Carolina University, USA, 2017.
[34]. D.T. Issa,Stressors and Coping Strategies amongst Hemodialysis Patients in North of West Bank, Published Master Thesis, Faculty of Graduate Studies, An-Najah National University, Nablus, Palestine, 2015.
[35]. K. Parvan, R. Ahangar,F. Hosseini, F. Abdollahzadeh, M. Ghojazadeh, and M.Jasemi, Coping Methods to Stress Among Patients on Hemodialysis and Peritoneal Dialysis , Saudi journal of kidney diseases and transplantation, 26(2), 2015, 255-62.
[36]. M. Shinde, and S. Patil Mane, Stressors and the Coping Strategies among Patients Undergoing Hemodialysis, International Journal of Science and Research, 3(2), 2014, 266-76.
[37]. S. Yeh, C. Huang, H. Chou, and T. Wan, Gender Differences in Stress and Coping among Elderly Patients on Hemodialysis, Sex Roles, 60(1), 2009, 44- 56.

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