

# PATIENTS' PERCEPTION OF PHYSICAL AND PSYCHOSOCIAL STRESSORS AND COPING STRATEGIES IN HEMODIALYSIS UNITS

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## ABSTRACT:

**Background:** chronic kidney disease and its treatments lead to psychological and physiological stressors, which are challenging for the patients.

**Aim:** This study aimed to identify the physiologic and the psychosocial stressors and coping strategies among hemodialysis patients.

**Method:** In this descriptive cross sectional study, a convenience sample of 50 Syrian men and women was recruited from outpatients' dialysis units in Tishreen hospital . Study participants were completed the questionnaire on stress and coping.

**Result:** The most frequent experienced physiological stressors included fatigue, limitations of food, limitations of physical activity , Limitation of fluid and thirsty, whereas the most frequent psychosocial stressors included irritability, dependency, uncertainly about future , sadness and change in family responsibility. The patients with psychosocial stressors scores mean was 2.14, which is nearly equal the mean of physiological stressors of 2.11. Problem orient was the most common coping strategies used by the patients. Among patients, 18 (35.5%) of the study participants were having not very stressful and 12(24%) of the study participants were having very mild stress and only one (3%) had severe stress. The study also revealed that 21(41.5.28%) of the participants were sometimes had coping whereas 17(33.2%) of them always had coping .

**Conclusion:** Hemodialysis relates to physiological and psychosocial stressors. Dialysis staff can effectively help patients by utilizing the coping strategies that alleviate stressors.

**Keywords:** Chronic kidney disease , Hemodialysis, Stressors, Coping strategies



## INTRODUCTION:

Chronic kidney disease is one of the common diseases in the human societies and nowadays 2-3% of the people are suffering from this disease all around the world.<sup>[1]</sup> Prevalence of this disease is increasing in the world; which average global growth was 8% per year in the last 5 years. <sup>[2]</sup> The number of patients being treated for End Stage Renal Disease 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.<sup>[3]</sup> Chronic kidney disease is among the most difficult-to-treat diseases, with an incapacitating nature. Hemodialysis remained the most common treatment modality, with approximately 1,929,000 patients undergoing hemodialysis (89% of all dialysis patients), while hemodialysis and other types of renal treatment can mitigate the chronic kidney disease to some extent, the disease and the side effects of the

treatments often disrupts many daily life activities of the patients and a variety of physical and psychosocial stressors that generally affect quality of lives patients. [4,5] Life on dialysis is a perpetual challenge due to demanding treatment schedule and dietary restrictions. The dialysis depends on machine for survival conflicts with the independence needed to maintain a normal life. Furthermore, Life on dialysis shows similarities with other chronic disorders in that there are threats to autonomy, a considerable burden of illness and changes in functional status. Patients requiring long term hemodialys, often have many of problems, such as financial problems, difficulty in holding a job, waning a sexual desire and impotence, depression from being chronically ill and fear of dying. Younger patients worry about marriage, having children and the burden that they bring to their family. [6]

Since 10 years ago the quality of life of patients being treated with hemodialysis attracted attention of too many researchers. Recent studies show that 30-80% of these patients complain physical problems about sleep disorders such as staying awake at night, restless legs syndrome, late falling asleep, restlessness and sleepness during days. [7] Other studies find that there are multidimensional psychosocial problems facing chronic kidney disease patients that include fatigue, anger, fear, depression, anxiety, family and social isolation, poor adherence to treatment, work problems, and more [8,9]

Patient's coping with hemodialysis device is psychologically important because an organ failure affects an individual's quality of life; therefore we have to trust the methods that improve patient's coping ability since true coping methods and effective adaptation with disease can increase the possibility of patient's rehabilitation improves his quality of life. [10] , so patients receiving hemodialysis 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. [11]

Understanding stressful factors will allow nurses to managing dialysis patients' problems and focus on specific interventions for enhancing quality of life. In addition to it is important to understand the extent of burden experienced by patients facing various stressors related to hemodialysis. Due to the fact that no appropriate studies have been conducted for studying the quality of life and stressors in hemodialysis units , thus this study was conducted by the aim of examine the psychosocial and physiological stressors among Syrian patients with Chronic kidney disease on Hemodialysis and the coping strategies used.

## **MATERIALS AND METHODS:**

The Hemodialysis Stressors Scale (HSS) was used in order to identify the nature

and severity of stressors commonly encountered by patients on hemodialysis a stressor scale developed by Baldree et al (1982)<sup>2</sup> was used. The scale consisted of 23 potential stressors which were classified as sixteen physiological and seven psychosocial stressors based on the distinction given by Monat & Lazarus (1987)<sup>[12]</sup> Each stressor was rated according to Likert type format, Each of these items had 5 responses such as not stressful, very mild stress, mild stress, moderate stress and severe stress with the score of 0,1,2,3 & 4 respectively. The total possible score was 100. The score was interpreted as percentage of total: not stressful 0%, very mild stress 1-25%, mild stress 26-50%, moderate stress 51-75%, severe stress 76% and above. The overall stress score represents the sum of physical and psychological level of stress. Coping scale Tool was developed by researchers specifically for the purpose of this study to identify coping strategies used by patients. The final version of the Coping Scale Tool consists of the 28-item questionnaire. Each statements had 3 responses such as never, sometimes and always with a score of 1,2 and 3 respectively. Coping scale had four sub-parts: problem oriented, emotion focused, seeking support and avoidance oriented used by the patients in response to stress. Reliability of the instrument was tested (cronbach Alpha=0.70)

A descriptive cross sectional study design was conducted to identify the types and severity of stressors in convenient

sampling of 50 patients diagnosed to have chronic kidney disease, who are on long term hemodialysis. The inclusion criteria of the study sample consisted of: the participant being (1) on hemodialysis for at least one month; (2) at least 18 years of age; participants of this age and above are adults and able to understand the items in the questionnaires in order to be able to answer them; (3) able to read and write in Arabic. Participants with known cognitive impairments were excluded from the study. The present study was conducted in the hemodialysis unit of a Tishreen University Hospital in Latakia. Data collection for the study was carried out in the period from February 2017 to June 2017. The researcher collected the data during the hemodialysis. The main investigator distributed the questionnaires personally and checked complete filling of data.

**Research Ethics:** An official approval was obtained from the dean of faculty of nursing and the director of the Tishreen University Hospital at Latakia city. An oral consent was obtained from patients undergoing hemodialysis to participate in the study. During the initial interview, the purpose of the study and the procedures were explained. The subjects were assured that all information would be confidential to assure the confidentiality of the participants. It was explained that there were no costs to participate in the study. 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.

## RESULTS:

The ages of participants ranged from 20 to 77 years with mean = 48.92 (SD = 13.49). No participants were excluded based on their age. There were 56 % males (n = 28) and 44% female (n=22). Approximately 88% of the participants were married (n = 44) and the remaining were single 10 % (n = 5), and 2 % (n = 1) were widowed. The highest percentage education level in the study was the "essential" group 56 %, (n = 28), and the lowest was "secondary and college" 22% (n = 11). The majority of participants were not employed (60 %, n = 30). most of subjects dialyzed twice per/week (90 %, n = 45) (Table 1). The range of time since the start on dialysis was 1months to 9 years with a mean of 17.84, (SD = 22.27). orderly ranked in Table 2 the most important physiological stressors were ranked according to their mean score as followed: Fatigue (M=2.90, SD=0.89), Limitation of food(M=2.78, SD=0.93), Limitation of physical activity (M=2.72, SD=0.93), Limitation of fluid (M=2.62, SD=0.81), Thirst(M=2.46, SD=1.07), while Joint pain (M=1.74, SD=0.94), Shortness breath( M=1.74, SD= 0.90), Nausea (M=1.68, SD=0.98) and Vomiting (M=1.68, SD=1.02), Chest pain(M=1.54, SD=0.77) were classified as least important physiological stressors by patients. Among the psychosocial stressors, irritability (M=2.72, SD=1.05), Dependency on other(M=2.26, SD=1.08),

Uncertainty about future (M=2.24, SD=1.19), Sadness (M=2.08, SD=1.21) were found to be the major ones. Whereas fear of being alone (M=1.94, SD=1.27), Depression (M=1.78, SD=1.06) were classified as least important psychosocial stressors (Table 3). Table 4 illustrated the frequency and percentage distribution of the level of stress among patients undergoing hemodialysis. 18(35.5%) of the participants were having not stressful whereas 12(24%) of them were having very mild stress and 11(21.5%) of the participants were having mild stress and only one (3%) had severe stress. From the above shown table it is seen that most of patients undergoing hemodialysis used problem orient (M=2.47, SD=0.27), and Seeking support (M=2.11, SD=0.54) as their coping strategies, whereas emotion focus (M=1.72, SD=0.35), were reported as least coping strategies(Table 5). Table 6 showed the frequency and percentage distribution of the level of coping among patients undergoing hemodialysis . 12(25.2 %) of the participants were never had coping whereas 21(41.5%) of them had sometimes coping and 17(33.22 %) of the participants were always had coping .

Table 6 shows the correlation between stress and coping ability among the patients undergoing hemodialysis. The Pearson's correlation co-efficient value was  $r=0.34$ , which shows was statistically not significant at  $p < 0.001$ .

## DISCUSSION:

Results of this study showed that the most of the physiologic stressors were included respectively: fatigue, limitation of food, limitation of physical activity, limitation of fluid, thirst and the least physiologic stressors were respectively included joint pain and shortness breath, nausea and vomiting and chest pain. Similar results in a descriptive correlation study by Logan et al (2006) in Canada on 50 hemodialysis patients, found that the fatigue and limitation of liquids were in the highest rank and joint stiffness was in the lowest rank of the stressors in hemodialysis patients.<sup>[13]</sup> Shahrokhi et al, 2014, in their descriptive cross sectional study of 30 patients on haemodialysis, results of this study showed that the most bothering physiologic stressors respectively include; fatigue, limitations of fluid and limitations of food and arterial & venous stick.<sup>[14]</sup> Whereas Cinar et al, 2009 conducted a descriptive study in Turkey; results of this study showed that occupation limitations, fatigue and uncertainty about the future respectively are the most common stressors.<sup>[15]</sup> Another study was conducted by Mok and Tam (2001) on 50 hemodialysis patients of Hong Kong'. Results of the study showed that fluids limitations, food limitations, itching, fatigue and treatment costs were stated as the most common stressors.<sup>[16]</sup> Also Tsay and colleagues, using the Hemodialysis Stressor Scale (HSS) to assess 57 patients with end stage renal disease 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 treatment, and limitation of physical activities.<sup>[11]</sup> Harwood et al, conducted a study with 226 patients on dialysis treatment in order to investigate stressors and coping in individuals with chronic kidney disease. The participants reported fatigue, sleep problems, peripheral neuropathy, as the most frequent experienced stressors.<sup>[17]</sup> This difference can be due to different understanding of stressors because of social and cultural differences of the societies.

Psychosocial stressors are also common problems among individuals with hemodialysis. Results of this study showed that there are major psychosocial problems that are facing chronic kidney disease includes: irritability, dependency on other, uncertainty about future, sadness, whereas anger, fear, depression, anxiety, family and social isolation, poor adherence to treatment, work problems were reported in incongruent study by Ahmad, 2010 in Jordan and Yen et al, 2009 in Taiwan.<sup>[8,9]</sup>

Literature found that the most psychological consequences of chronic kidney disease may include depression and anxiety. The problem of depression among hemodialysis patients can be a consequence of stressors and a non-efficient coping strategy.<sup>[18,19]</sup> However, depression is potentially a modifiable risk factor in end stage renal disease,

thus, a multidisciplinary approach of encounter depression is recommended to be part of routine evaluation of patients on dialysis. Study showed that both type of stressors had an equal impact on the patient undergoing hemodialysis . this results supported by Thomas, K, 2006 to identification of stressors in patients with chronic kidney disease, undergoing long term hemodialysis in the Kerala state.<sup>[20]</sup>

Our study showed that ( 35.5%) of the participants were having not stressful, whereas 12(24%) of them were having very mild stress and only one (3%) had severe stress. This result is incongruent with the result of a descriptive cross sectional study conducted by Shindi , 2014, design of 30 patients admitted at Krishna hospital, Karad, India to assess the stressors and coping strategies among patients undergoing haemodialysis, this study found that 97% patients had severe stress while 3% patients had moderate stress among patients undergoing hemodialysis.<sup>[21]</sup> Juliana and Arjunan , 2015 in their study about distribution of the level of stress among patients subjected to hemodialysis showed that 39(65%) of the participants had mild stress whereas 12(20 %) of them had moderate stress.<sup>[22]</sup> This result is attributed to the economic problems caused by the war in Syria, which may be recorded as more important stressors by Syrian patients, so it is recommended in future studies to add economic stressors of the tool.

The study revealed that most of patients undergoing hemodialysis adopt problem orientation and seeking support as their coping strategies, while least of patient used emotion focused and voidance orient coping strategy. This was supported by some researches done by which they found that patients with chronic renal disease 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.<sup>[23]</sup> Additionally, Welch and Austin conducted a similar study, concerning stressors, coping and depression in haemodialysis. The results have shown that psychosocial stressors were associated with greater use of problem-solving, social-support and avoidance of coping.<sup>[24]</sup> Whereas Mok and Tam reported that the most common coping methods used by patients with chronic renal disease 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."<sup>[16]</sup> Others have found that patients receiving haemodialysis use more evasive coping strategies.<sup>[25]</sup> Patients receiving haemodialysis may be continuously appraising their symptoms, the disease progression with respect to their significance for well-being, and survival; therefore, different coping strategies will appear interchangeably.

Pearson correlation was used to find out the relationship between the coping strategies and stressors of the patient undergoing haemodialysis, on calculating it showed that the Correlation coefficient ( $r$ ) = 0.34 which is considered statistically not significant. Whereas Shahrokhi et al, 2014, in their descriptive cross study of 30 patients on haemodialysis, reported a negative correlation between total stressor scores and total coping scores. [14,20] Therefore, it is important to understand the extent of stress experienced by patients facing various stressors related to haemodialysis and the relationship between the patients' coping strategies and the stress factors.

## CONCLUSION

Considering that nursing staff provides the most services for these patients, they can provide more support for them by better understanding of the hemodialysis patients' life to overcome their stresses and to have a higher quality of life. Also these results can help patients and their families to provide appropriate educational programs to achieve useful coping skills. Nurses should utilize their knowledge to assess the level of stress of

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the patients undergoing haemodialysis, and motivate them to practice the positive coping strategies and design some interventions to facilitate coping with the problems in these patients. In the another hand, the present study emphasis on enhancement regarding knowledge among nursing students, and staffs regarding the stressors and the coping strategies used by the patients undergoing hemodialysis. Nursing leaders should enhance coping strategies among the hemodialysis patients by reinforcement of training through the readymade video package.

**Recommendation:** There is a need to carry out more researches to detect the strategies that can be effectively administered to reduce the stress among the patients undergoing hemodialysis. An experimental study can be carried out to find out the effectiveness of a relaxation program in reducing the stress levels and enhancing coping strategies among the patients undergoing hemodialysis.

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**TABLES:**

Variables		No	%	M (SD)
<b>Age</b>				48.92 (13.49)
<b>sex</b>	Males	28	56%	
	Females	22	44%	
<b>Marital status</b>	Single	5	10%	
	Married	44	88%	
	Widowed	1	2%	
<b>Education</b>	Essential	28	56%	
	Secondary	11	22%	
	College	11	22%	
<b>Work</b>	yes	12	24%	
	No	30	60%	
	Retired	8	16%	
<b>Duration of dialysis: (months)</b>				17.84 (22.27)
<b>Numbers per week</b>	One	4	8%	
	Two	45	90%	
	Three	1	2%	

Table 2 : Rank ordering of physiological stressors according to the severity of occurrence.

Rank	Stressor	Mean (SD)
1	Fatigue	2.90 (0,89)
2	Limitation of food	2.78 (0.93)
3	Limitation of physical activity	2.72 (0.93)
4	Limitation of fluid	2.62 (0.81)
5	Thirst	2.46 (1.07)
6	Dryness of mouth	2.26 (1.12)
7	Muscle cramps	2.18( 0.85)
8	Headache	2.10 (0.95)
9	Itching	2.00 (1.12)
10	Pain at the access site	1.98 (0.91)
11	Dizziness	1.88 (0.85)
12	Backache	1.76 (0.96)
13	Joint pain	1.74 (0.94)
14	Shortness breath	1.74 (0.90)
15	Nausea	1.68 (0.98)
16	Vomiting	1.68 (1.02)
17	Chest pain	1.54 (0.77)
	total	2.14 (0,71)

Table 3 : Rank ordering of psychosocial stressors according to severity of occurrence.

SI. No.	Stressor	Mean (SD)
1	Irritability	2.72 (1.05)
2	Dependency on other	2.26 (1.08)
3	Uncertainty about future	2.24 (1.19)
4	Sadness	2.08 (1.21)
5	Change in family responsibility	1.98 (1.12)
6	Fear of being alone	1.94 (1.27)
7	Depression	1.78 (1.06)
	total	2.11 (0.43)

Table 4: Assessment of level of stress among the patients undergoing hemodialysis.

Sr. No	Level of stress	N	%
1	Not stressful	18	35.5%
2	Very mild stress	12	24%
3	mild stress	11	21.5%
4	moderate stress	8	16%
5	severe stress	1	3%
	Total	50	100%

Table 5 : Rank ordering of Coping strategies according to severity.

SI. No.	Coping strategies	Mean (SD)
1	Problem orient	2.47(0.27)
2	Seeking support	2.11(0.54)
3	Voidance orient	2.09(0.37)
4	Emotion focus	1.72(0.35)
	Total	2.09(0.27)

Table 6. distribution according to level of coping among patients undergoing hemodialysis.

SI. No.	Level of coping	N	%
1	Never	12	25.28
2	Sometimes	21	41.5
3	Always	17	33.22

Table 7: Correlation between stress and coping among patients undergoing hemodialysis.

	Mean	SD	r-value
stress	2.13	0.44	0.34
coping	2.10	0.27	