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Depression, anxiety, stress and coping strategies among patients undergoing hemodialysis

M Priyadharshini[1], Liji Sara Varghese[2] and Dr. Hema VH[3]

[1] M.Sc. Nursing, Department of Mental Health Nursing, Dr. M.G.R Educational and Research Institute, Faculty of Nursing, Velappanchavadi, Chennai, Tamil Nadu, India
[2] Associate professor, Department of Mental Health Nursing, Dr. M.G.R Educational and Research Institute, Faculty of Nursing, Velappanchavadi, Chennai, Tamil Nadu, India
[3] Principal, Department of Medical Surgical Nursing, Dr. M.G.R Educational and Research Institute, Faculty of Nursing, Velappanchavadi, Chennai, Tamil Nadu, India

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Abstract

Chronic kidney disease is an irreversible decline in renal function, which can be fatal in the absence of dialysis and transplantation. Hemodialysis causing many physical and psychological problems, such as depression, anxiety, stress and inefficiency in patient, which should be considered in health promotion intervention.

Objectives: To assess the level of depression, anxiety, stress among patients undergoing hemodialysis. To assess coping strategies among patients undergoing hemodialysis. To assess correlation between depression, anxiety, stress and coping strategies among patients undergoing hemodialysis. To find the association between the depression, anxiety, stress among patients undergoing hemodialysis with selected demographic variables and clinical variables. To find the association between coping strategies among patients undergoing hemodialysis with selected demographic variables and clinical variables.

Methodology: A descriptive cross-sectional study was conducted in A.C.S Medical College and Hospital and Government Medical College Hospital, Thiruvallur. The 100 samples who fulfilled the inclusion criteria were selected by using purposive sampling technique. The tool used to collect data were demographic proforma, DASS-21 and brief COPE inventory.

Findings: The study findings revealed that among 100 patients undergoing hemodialysis 74(74%) had extreme severe depression, 46(46%) had mild anxiety, 48(48%) had mild stress, 60(60%) had low level of problem-focused coping, 59(59%) had average level of emotion-focused coping, 62(62%) had low level of avoidant coping. However, the overall analysis of coping strategies among patients undergoing hemodialysis revealed that 93(93%) had average coping and 7(7%) had low level of coping. The calculated Karl Pearson's Correlation value of 'r' between depression (r= - 0.324), anxiety (r= -0.348), stress (r= -0.303) showed a negligible negative correlation with coping strategies, which was found to be statistically significant at $p<0.001$. The demographic variable occupation ($\chi^2=28.975$, p=0.024), marital status ($\chi^2=21.482$, p=0.044) had shown statistically significant association with level of depression, anxiety. Respectively occupation ($\chi^2=43.532$, p=0.0001) had shown statistically significant association with level of stress. The clinical variable how many years did you receive hemodialysis ($\chi^2=22.358$, p=0.034), how many days in a week, did you receive hemodialysis ($\chi^2=20.637$, p=0.008), family history of renal problem ($\chi^2=11.405$, p=0.022) and access for hemodialysis ($\chi^2=13.211$, p=0.010) had shown statistically significant association with level of depression, stress among patients undergoing hemodialysis at $p<0.05$ level. The demographic variable marital status ($\chi^2=10.442$, p=0.015) had shown statistically significant association with level of coping strategies among patients undergoing hemodialysis at $p<0.05$.

Conclusion: The findings of the study showed that the patients undergoing hemodialysis has extreme severe depression, mild level of anxiety and stress. Patient using average level of coping strategies. The study pointed out the importance of reducing the depression, anxiety, stress and improving coping strategies among patients undergoing hemodialysis.

Keywords: Depression, anxiety, stress, coping strategies, hemodialysis

Introduction

"Worry is my worst enemy … an enemy I unleashed upon myself".

-Terri guillmets.

The urinary system is one of the body's excretory systems. It is made up of two kidneys secrete urine, two ureters transport urine from the kidney to the urinary bladder, and one urinary bladder collects and temporarily stores pee. The urine is evacuated from the urinary bladder to the outside through one urethra. The kidneys contain a pair of excretory part of the body that eliminate metabolic waste through urine while also maintaining electrolyte and water balance in the body. Chronic kidney disease (CKD) involves progressive, irreversible destruction of the nephrons in both kidneys, the disease process progresses until most nephrons are destroyed and replaced by non-functional scar tissue. According to NIDDK (National Institute of Diabetes and Digestive and Kidney Diseases**)** hemodialysis is a treatment that filters wastes and water from the blood in the same way as the kidneys did. Hemodialysis can improve the quality of

life and extend our life, but it is not a cure for kidney failure. Hemodialysis (HD) is the most common Renal Replacement Therapy modality in India.

Background of the study

Individuals diagnosed with kidney disease usually develop psychiatric complications as the dialysis procedure causes changes in the physical health and social life. According to the findings of a study by (Nazemian *et al*., 2008) [34] done a study on association between dialysis patients' depression rates and stress, 64.5% of patients suffer from depression, 51.4% from explicit stress, and 49.7% from hidden stress.

Need for the study

Dialysis is a stressful process and follows various psychological and social problems which can lead to patients' mental disturbances. Porkodi *et al*., (2018) [23] conducted a cross sectional study to assess the level of stress and coping among 60 Indian patients subjected to hemodialysis at dialysis unit in tertiary care hospital. The result revealed that among patient subjected for dialysis 39 (65%) have mild stress, 12(20%) have moderate stress, 38(63.3%) of the participants never used coping strategies whereas 22(36.7%) of them had sometimes used coping strategies.

Statement of the problem

A study to assess depression, anxiety, stress and coping strategies among patients undergoing hemodialysis at selected hospitals.

Objectives

Objectives of the study were to

- Assess the level of depression, anxiety, stress among patients undergoing hemodialysis.
- Assess coping strategies among patients undergoing hemodialysis.
- assess correlation between depression, anxiety, stress and coping strategies among patients undergoing hemodialysis.
- Find the association between the depression, anxiety, stress among patients undergoing hemodialysis with selected demographic variables and clinical variables.
- Find the association between coping strategies among patients undergoing hemodialysis with selected demographic variables and clinical variables.

Hypothesis

H1: There will be a significant correlation between depression, anxiety, stress and coping strategies among patients undergoing hemodialysis.

H2: There will be a significant association between depression, anxiety, stress among patients undergoing hemodialysis with selected demographic variables and clinical variables.

H3: There will be a significant association between coping strategies among patients undergoing hemodialysis with selected demographic variables and clinical variables.

Materials and Methods

Research approach: Quantitative.

Research design: Descriptive study.

Setting of the study: A.C.S Medical College And Hospital And

Government Medical College Hospital, Thiruvallur

Population: Patients undergoing hemodialysis.

Sample: Patients undergoing hemodialysis who meet the inclusive criteria.

Sample size: 100

Sampling technique: Purposive sampling.

Sampling criteria

Inclusive criteria

1. Patient who are available at the time of data collection.
2. Patient who can able to speak Tamil or English.
3. Patient who is on AV fistula or Internal Jugular Vein access for hemodialysis.

Exclusive criteria

1. Patient who are not willing to participate.
2. Patient who are having any cognitive impairment.

Tools for data collection

Section A: Demographic proforma

Demographic proforma includes demographic variables and clinical variables.

Section B: Depression, Anxiety, Stress Scale -21

DASS - 21 was designed in 1995 by Lovibond & Lovibond. DASS-21 is a modified version of DASS-42 Self- reported items, each reflecting a negative emotional symptom. These scores ranged from 0- did not apply to me at all (NEVER), 1- applied to me some of the time (SOMETIMES), 2- applied to me to a considerable time (OFTEN), 3- applied to me very much (ALMOST ALWAYS).

Section C: **Brief COPE Inventory**

Brief COPE Inventory was developed by Charles Carver in 1997. The brief COPE inventory is a 28 item self- report questionnaire designed to measure effective & ineffective ways to cope with a stressful life event. The scale can determine someone's primary coping styles with scores on three subscales:

- Problem focused coping.
- Emotional focused coping.
- Avoidant coping.

Ethical considerations

Ethical clearance was obtained from the Institutional Ethical Committee of A.C.S Medical College and Hospital, Vellappanchavadi. (No. 370 / 2021 / IEC / ACSMCH Dt. 22.10.2021). Informed consent was obtained from the study participants, confidentiality was maintained throughout the study.

Pilot study

Pilot study was conducted on 05.11.2021 to 06.11.21 with 10 patients undergoing hemodialysis at A.C.S Medical College & Hospital. The data was collected using Demographical proforma, DASS-21 Scale, Brief Cope Inventory on interview method. On the basis of the pilot study, tool was found feasible, and so the investigator was able to proceed to the final study using the same tool.

Data collection procedure

The data collection period was one month from 15-11-2021 to 15-12-2021. The written permission was obtained from the Honourable Secretary of A.C.S Medical College and Hospital, Vellappanchavadi, and Dean of Government Medical College Hospital, Thiruvallur. Hemodialysis patients who fulfilled the inclusion criteria were selected by using purposive sampling technique. The researcher introduced herself to the patient undergoing hemodialysis and developed good rapport with them for their co-operation. The researcher assured the participants for the confidentiality of their response.

Results and Discussion

Table 1: Frequency and percentage distribution of demographic variables of the patients undergoing hemodialysis. N=100

Demographic Variables	Frequency	Percentage
Age		
30 - 40 years	15	15.0
41 - 50 years	33	33.0
>50 years	52	52.0
Gender		
Male	66	66.0
Female	34	34.0
Educational status		
Primary school level	54	54.0
Secondary school level	13	13.0
Graduate	9	9.0
Illiterate	24	24.0
Marital status		
Married	71	71.0
Unmarried	9	9.0
Widow	18	18.0
Divorced	2	2.0
Occupation		
Unemployment	72	72.0
Private	5	5.0
Government	3	3.0
Retired	3	3.0
Self-employee	17	17.0
Income		
Below Rs.5000/-	24	24.0
Rs.5,001 - Rs.20,000/-	74	74.0
Above Rs.20,000/-	2	2.0
Residence		
Urban	31	31.0
Rural	69	69.0
Type of family		
Nuclear family	81	81.0
Joint family	19	19.0

Table 2: Frequency and percentage distribution of clinical variables of the patients undergoing hemodialysis. N=100

Clinical variables	Frequency	Percentage
History of hereditary disease		
Diabetes mellitus	8	8.0
Hypertension	44	44.0
Both	25	25.0
None	23	23.0
Family history of renal problem		
Yes	16	16.0
No	84	84.0
Dietary habits		
Vegetarian	13	13.0
Mixed	87	87.0
Personal habits		
Smoking	0	0
Alcoholism	0	0
Both a and b	0	0
None	100	100.0
Access for hemodialysis		
AV fistula	96	96.0
Internal Jugular vein	4	4.0
Site of AV fistula		
Right hand	28	28.0

Left hand	72	72.0
How many years did you receive hemodialysis		
Less than 1 year	37	37.0
1 year to 2 years	25	25.0
3 years to 5 years	29	29.0
More than 5 years	9	9.0
How many days in a week did you receive hemodialysis		
2 days or less	84	84.0
3 days	15	15.0
4 days	1	1.0
Do you take medicines regularly		
Yes	79	79.0
No	19	19.0
Sometime	2	2.0

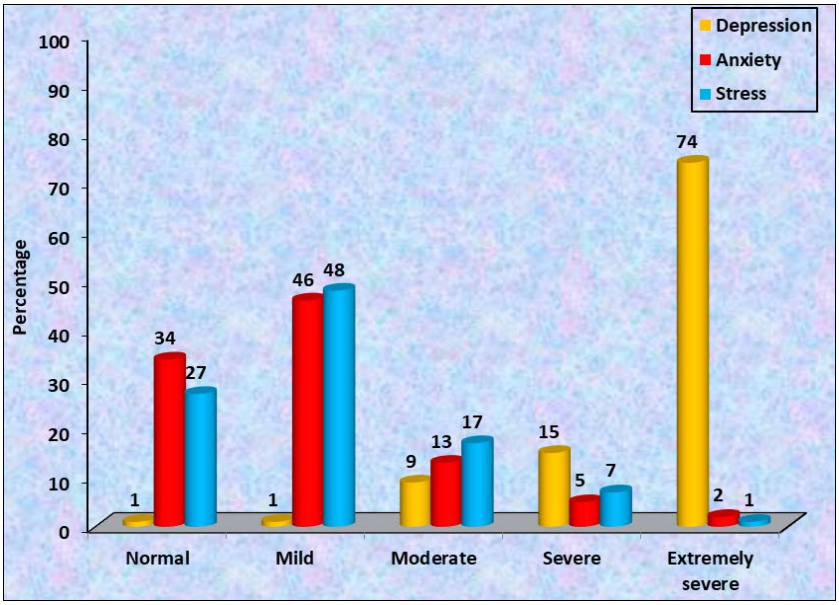

Fig 1: Percentage distribution of level of depression, anxiety, stress among patients undergoing hemodialysis

Fig 1 shows that among all the samples 74(74%) had extreme severe depression, 46(46%) had mild anxiety, 48(48%) had mild stress. The above findings were supported by Kumar. V *et al*., (2018) [21] on depression & anxiety in patients who were undergoing hemodialysis with chronic kidney disease. The study assessed that, 92(61.3%) patients had depression, whereas 42(28%) had anxiety.

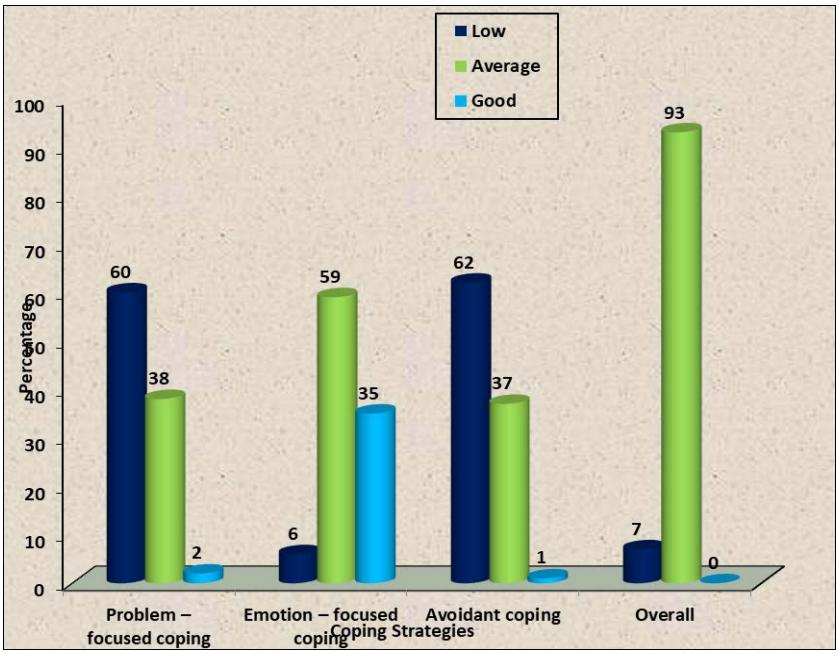

Fig 2: Percentage distribution of level of coping strategies among patients undergoing hemodialysis

Fig 2 shows that with respect to Problem - focused coping 60(60%) had low level of coping, Emotion - focused coping, 59(59%) had average coping, Avoidant coping 62(62%) had low level of coping. The above findings were supported by Lydia Muthoka *et al*., (2021) [29] the study results concluded that commonly used coping strategies were confrontational (45%), fatalistic (46%) and supportive (48%). The findings were contradictory with the study conducted by Pravan, (2015) the result showed that 53.6% of patients had inadequate coping and 37.9% of patient had moderate coping.

Table 3: Correlation between depression, anxiety, stress and coping strategies among patients undergoing hemodialysis. N = 100

Variables	Mean	S.D	Karl Pearson's Correlation 'r' Value
Depression	15.0	3.41	r= -0.324 p=0.001, S***
Coping	66.14	9.23	
Anxiety	4.45	1.75	r= -0.348 p=0.0001, S***
Coping	66.14	9.23	
Stress	8.79	2.01	r= -0.303 p=0.002, S**

Table 3 shows that even though there was a negligible negative correction between depression, anxiety and stress to coping strategies it provides information to nurses treat patients may not be able to cope appropriately when there is an increase level of depression, anxiety and stress.

Association between depression, anxiety, stress among patients undergoing hemodialysis with selected demographic variables and clinical variables

The demographic variable occupation, marital status had shown statistically significant association with level of depression, anxiety. Demographic variable occupation had shown statistically significant association with level of stress. The clinical variable years of receiving hemodialysis had shown statistically significant association with level of depression. The clinical variable days in a week receive hemodialysis, family history of renal problem and access for hemodialysis had shown statistically significant association with level of stress. Where as the other clinical variables had shown no significant association with level of stress, anxiety among patients undergoing hemodialysis.

The above findings were supported by Badema Cengi.*et al*., (2010) [8] study on depression in hemodialysis patients at Bosnia & Herzegonia. The employment status was found to be significantly associated with depression ($p<0.002$) whereas unemployed patients were significantly more depressed in relation to employed patients. The above findings were contradictory by Rayyani M. *et al*., (2014) [46] study on stressors and coping strategies in dialysis patient at Iran. The result showed that, there was no significant statistical difference between the type of stressors & demographic variables of occupation (p=0.292) and hemodialysis times per week (p=0.292).

Association between coping strategies among patients undergoing hemodialysis with selected demographic variables and clinical variables

The demographic variable marital status had shown statistically significant association with level of coping strategies. However the other demographic variables had shown no significant association with level of coping strategies among patients undergoing hemodialysis. None of the clinical variables had shown significant association with level of coping strategies among patients undergoing hemodialysis.

The above findings were supported by Theodoritsi. *et al*., (2016) [47] The result concluded that social and family support had significant association with marital status $p<0.001$. The above study findings were contradictory by Raayani M. *et al*., (2014) [46] study on stressors and the result founded that, there was no statistically significant difference between the level of coping mechanisms with marital status (p=0.796).

Conclusion

The findings of the study showed that the patients undergoing hemodialysis has extreme severe depression, mild level of anxiety and stress. Patient using average level of coping strategies. The study pointed out the importance of reducing the depression, anxiety, stress and improving coping strategies among patients undergoing hemodialysis.

Nursing implication

Nursing practice

- Nurses help the patients who are undergoing hemodialysis to initiate positive thoughts and motivate them.
- Nursing personnel should help the patients undergoing hemodialysis organizes daily life skills to meet with the challenges of living in a stressful condition.

Nursing education

- To create awareness and improve the knowledge regarding the psychological problems.

Nursing administration

- The nursing administrator promote in-service education and special training programs.
- Nursing professionals can offer opportunity to create awareness among nursing students, staffs.

Nursing research

- There is a need to carry out more research to detect strategies that can be effectively administered to reduce the psychological problems such as depression, anxiety, stress.

Limitations

- The research was only conducted among patients undergoing hemodialysis.
- The research was done only in two hospitals.

Recommendation for further study

- Use any intervention for patients undergoing hemodialysis.
- A similar study can be concluded with qualitative approach.

Conflict of Interest

Not available

Financial Support
Not available

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