

Stressors and Coping Strategies among the Patients undergoing Maintenance Haemodialysis at B.P. Koirala Institute of Health Sciences

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ABSTRACT

Background: Haemodialysis patients had more problems in physical, social and psychological dimensions of life and these dimensions are the stressful factors and they use various strategies to cope with the stressors. This study aims to identify the stressors and the coping strategies among the patients undergoing maintenance haemodialysis and to determine the association between the stressors and coping strategies with the selected demographical variables of patients.

Materials and Methods: This descriptive cross-sectional study was conducted in 55 patients who were in current schedule of haemodialysis in B.P. Koirala Institute of Health Sciences. Total enumerative sampling technique was used wherein data was collected over duration of one month using semistructured interview questionnaire. Descriptive and inferential statistics were used.

Results: The mean age of the respondents was 54.40 ± 13.93 and two third (65.5 %) were male. Mean score for stressors was 43.58 (SD = 16.69) and for coping strategies was 66.65 (SD = 9.17). The study revealed that there was significant association of psychosocial stressors with age and financial support with p value of 0.01. Similarly, there was significant association of educational status with coping strategies with p value 0.03. No correlation was found between stressors and coping strategies.

Conclusion: The study concluded that cost factors was stressors to cause high stress followed by loss of bodily function, fatigue, limitation on time and place for vacation. Coping strategies adopted by the patients undergoing haemodialysis were acceptance, use of emotional support, humor, use of instrumental support whereas substance use, denial, self blame were least used.

Key Words: Stressors, Coping Strategies, Patients, Maintenance Haemodialysis

INTRODUCTION

Haemodialysis is a source of economic burden and various complications. Among the many chronic diseases, patients with end stage renal disease on haemodialysis believe that their life relies on haemodialysis machine, which is associated with many physiological and psychosocial challenges. [1] The chronic disease and process of haemodialysis treatment are long-term stressors that alter

patients' wellbeing and everyday life style. [2] The client undergoing haemodialysis face different problems based on process of dialysis, its frequency and place of treatment. However they are forced to compromise with this permanent situation, which includes painful injection and needle prick's every day or couple of times a week. Patients cannot even count on short breaks without contact with dialysis center or home dialysis. This new way of life, imposed

treatment causes fatigue of unnatural situation and sometimes they develop feeling of revolt or a desire to stop treatment. In some cases they go to an extent to end their life or show aggressive behavior towards the environment. Among them, the sick undergo periods of breakdown, which is usually manifested by anxiety, despair and low self-esteem. [3]

Physiological stressors that impose limitations create stress and alter daily life, this includes; fluid and diet restrictions, reduced mobility, medications, fatigue, complications associated with therapy, vascular access surgeries, and length of treatment. [4] There are multidimensional psychosocial problems facing end stage renal disease (ESRD) patients that include anger, fear, depression, anxiety, family and social isolation, poor adherence to treatment, work problems, and more. [5] The patients undergoing haemodialysis use various strategies to cope with the stressors related to their disease and the treatment procedures.

The increasing incidence and prevalence of chronic kidney disease (CKD), including kidney failure requiring haemodialysis have drawn attention to the need for understanding the factors that cause stress to the patients undergoing haemodialysis and the various coping mechanism used by them. [6] In context of developing countries, chronic renal failure is a devastating medical, social and economic problem for patients and their families. The availability and quality of dialysis programs largely depend on the prevailing economic conditions, the political-social structure, overall health care facilities, and the health care funding strategies of various countries. In Nepal also, due to the low income, forty five percent of patients lost to follow up mainly because of financial problem. [7] The patients lost to follow up along with the failure of continuity of treatment may predispose the patient to the physical, physiological as well as psychological stress. Thus these factors, stressors and the coping mechanism should be addressed out.

There is still a significant lack of research dealing with stressors and coping strategies. Therefore, it is highly relevant to study the stressors and coping patterns of the patients undergoing haemodialysis. The findings can also be utilized to minimize the stress by managing stressors and to explore coping strategies. Hence, the investigator decided to conduct the study to identify the stressors and the coping strategies among the patients undergoing maintenance haemodialysis and to determine the association between the stressors and coping strategies with the selected demographical variables.

MATERIALS AND METHODS

Study Design: Descriptive cross sectional design was used for the study.

Setting: The setting was haemodialysis unit of B.P. Koirala Institute of Health Sciences (BPKIHS).

Population/ Participants: All patients undergoing maintenance haemodialysis at BPKIHS were taken as the participants for the study.

Study Sample: Participant meeting the eligibility criteria was taken as a sample for this study

Sample Size: A total of 55 patients undergoing maintenance haemodialysis were included in the study. During one month of data collection period, a total of 58 patients had undergone maintenance haemodialysis who had been under haemodialysis for at least 3 months. So, all the patients in haemodialysis unit under maintenance haemodialysis for at least 3 months meeting the inclusion criteria were the sample size.

Sampling Technique: Total enumerative sampling technique was adopted for the study.

Inclusion criteria:

- All patients who were in current schedule of maintenance haemodialysis at BPKIHS and had been under haemodialysis for at least 3 months.
- Those who were willing to participate in the study.

Exclusion criteria:

- Patient's non-compliance to the treatment. (Haemodialysis)
- Participants with known cognitive impairments.
- Participants unable to speak and sick at the time of data collection.

Research Tool: Interview questionnaire which consisted of three parts;

Part I contained questions related to socio demographic characteristics of the respondents.

Part II contained Haemodialysis Stressor Scale (HSS) developed by Baldree et al. [8] was used to assess the stressors and level of stress. The scale consists of 29 specific items. Out of which 7 items were physiological and remaining 22 were psychosocial stressors. Responses indicated item intensity via a 4-point likert-scale categorized as follows: No stress (0), less stress (1), low stress (2), the average stress (3) and high stress (4).

Based on the study by Gorji et al. [9] 2013, the total score for stress was interpreted. The total score of HSS is between 0 and 116 and depends on patients' response and is categorized into three levels as:

- Low stress (0-40),
- average stress (41-80),
- High stress (81-116).

Part III contained brief coping scale which measures coping strategies. The coping scale contains 28 items and 14 sub-scales. Each of these sub-scales gives information about different strategies for coping with stress and score 1-4. The total score is between 28- 112. A high score obtained from a subscale implies that particular strategy is used more often.

Data Collection Procedure: A formal approval was obtained from the Institutional Review Committee (IRC), BPKIHS, Dharan prior to data collection. The investigator, after discussion of the nature of study and data collection process, took verbal and written permission for conduction of the study with Hospital Matron, HOD of

Department of Internal Medicine and ward incharge of the haemodialysis unit of BPKIHS. The objectives of the study were explained to the respondents and the verbal and written consent was taken from the patient attending haemodialysis unit of BPKIHS, Dharan. Privacy and confidentiality of the respondents was maintained. Participants were reassured that their participation is voluntary and they can withdraw from the study at any time. Furthermore, they were assured that their participation will not affect the quality of care they were receiving. A face to face interview method was used as data collection method. Nepali version of the tool was used for data collection. The investigator herself collected the data.

Statistical Analysis: After completion of the data collection, questionnaire was checked for completeness and the filled format was handled with great care, stored and coded for future analysis. Serial number was given for each questionnaire. Master sheet was prepared to enter data. Finally, data was processed in the form of tabulation, categorization, summarization and interpretation. Obtained data was entered in Microsoft Excel 2007 and extracted into Statistical Package for the Social Sciences Software (SPSS) version 21 for statistical analysis. Descriptive and inferential statistics were used for data analysis. Frequency, percentage, mean, standard deviation were used for descriptive analysis and the data had been presented in tables. For inferential statistics, non-parametric chi square test and continuity corrected test were used to show the association between selected independent variables (age, sex, ethnicity, religion, income, education, duration of diagnosis of kidney disease and duration of treatment with haemodialysis) with stressors reported by the respondents and coping strategies used by them. The association between stressors and coping strategies were shown using Pearson correlation.

RESULTS

Table 1: Socio demographic Characteristics of the Respondents (n=55)

Characteristics	Category	Frequency	Percentage
Age in years	≤ 60	34	61.8
	>60	21	38.2
	Mean Age ± SD = 54.40 ± 13.93		
Sex	Male	36	65.5
	Female	19	34.5
Marital Status	Married	45	81.8
	Unmarried	2	3.6
	Others	8	14.54
Educational Status	Illiterate	9	16.4
	Literate	46	83.6
	If educated, (n=46)		
	Primary	22	47.8
	Secondary	17	37.0
	Higher secondary	5	10.9
Ethnicity	Bachelor and above	2	4.3
	Dalit (Terai / Hills)	4	7.3
	Janajati(Terai / Hills)	27	49.1
	Madhesi	8	14.5
Religion	Brahmin/ Chhetri	16	29.1
	Hindu	45	81.8
	Buddhist	4	7.3
	Christian	2	3.6
Past occupation	Others	4	7.3
	Housemaker	14	25.5
	Farmer	11	20.0
	Business	9	16.4
	Government Service	6	10.9
	Labor/Daily wages	5	9.1
Monthly Family income (in NRS.)	Others	10	18.1
	< 15000	16	29.1
	15000-25000	16	29.1
	>25000	23	41.8
Mean ± SD= 30,381.82± 5,908.86			

Table 1 shows that maximum (61.8%) of the respondents belong to age of 60 and less whereas 38.2% of them were of age more than 60yrs. Their mean age is 54.40 ±13.93. Majority (65.5%) of the respondents were male. More than four fifth (81.8%) of the respondents were married. By the educational status, 16.4% of the respondents were illiterate and remaining 83.6 % were literate. By ethnicity, majority 27(49.1%) of the respondents were Janajati whereas only 29.1% were Brahmin/ chhetri.

Minority, 14.5% and 7.3% were Madhesi and Dalit respectively. Regarding ethnicity, 81.8% percent of them were Hindu followed by 7.3% Buddhist and 3.6% Christian. One fourth (25.5%) of the respondents were house maker followed by farmer (20%), business (16.4%) and government service (10.9%).Majority of them had monthly family income of more than twenty five thousands whereas remaining percentage had income of less than 25,000. The mean family income is Rs.30,381±5, 908.86.

Table 2: Types of Family, History of Presence of Kidney disease and Treatment among the Family Members of the Respondents (n=55)

Characteristics	Category	Frequency	Percentage
Types of family	Joint	34	61.8
	Nuclear	21	38.2
Patient's Attendant	Children	24	43.64
	Spouse	21	38.18
	Siblings	6	10.90
	Others	4	7.28
Family history of kidney disease	Yes	8	14.5
	No	47	85.5
Family history of treatment with haemodialysis	Yes	1	12.5
	No	7	87.5

Table 2 reveals that among the total respondents, 61.8% were from joint family

followed by nuclear family (38.2%). Almost all respondents had been in hospital with

their family members. Regarding the information on the presence of kidney disease among family members of the respondents, it shows that there is no history of presence of kidney disease among the

family members of majority of the respondents (85.5%). 14.5 % had their family members with history of kidney disease and among them only 1 (12.5%) had been treated with haemodialysis.

Table 3: Duration of Diagnosis, Treatment with Haemodialysis and Financial Support of the Respondents (n=55)

Variables		Frequency	Percentage
Duration of diagnosis of Kidney disease	3-12 month	15	27.3
	>12 month	40	72.7
Mean ± SD= 45.02 ± 38.17			
Duration of treatment with haemodialysis	3-12 month	28	50.9
	>12 month	27	49.1
Mean ± SD= 20.58 ± 17.15			
Financial Support	Received	11	20
	Not received	44	80
Financial support by			
Relatives		5	45.4
Organization		3	27.3
Neighbour		3	27.3

Table 3 shows that the mean duration of time of diagnosis with kidney disease was 45.02 months with standard deviation of 38.17 followed by the duration since the start on dialysis with a mean of 20.58, SD = 17.15. Maximum numbers of respondents were suffering from kidney disease for more

than a year and were under haemodialysis for 3 month to one year.

Regarding financial support, 80% of the respondents haven't received any financial support other than government policy. 20 % of them have received financial support from their relatives, neighborhood and certain organization.

Table 4: Physiological and Psychosocial Stressors Faced by the Respondents (n=55)

Stressors	No stress n (%)	Less stress n (%)	Low stress n (%)	Average stress n (%)	High stress n (%)	Mean score ± SD
Physiological stressors						
Av Fistula	40 (72.7)	3 (5.5)	4 (7.3)	4 (7.3)	4 (7.3)	0.71±1.30
Nausea and Vomiting	15 (27.3)	8 (14.5)	8 (14.5)	9 (16.4)	15 (27.3)	2.02±1.59
Muscle Cramps	13 (23.6)	5 (9.1)	10(18.2)	9 (9.1)	18 (32.7)	2.25±1.57
Joint Stiffness	29 (52.7)	3 (5.5)	5 (9.1)	7 (12.7)	11 (20)	1.42±1.67
Itching	17 (30.9)	8 (14.5)	8 (14.5)	3 (5.5)	19 (34.5)	1.98±1.69
Fatigue	8 (14.5)	5 (9.1)	8 (14.5)	12 (21.8)	22 (40)	2.64±1.45
Loss of bodily function	5(9.1)	5(9.1)	10(18.2)	14(25.5)	21(38.2)	2.75±1.30
Psychosocial stressors						
Decrease in social life	11 (20)	13 (23.6)	9(16.4)	12 (21.8)	10 (18.2)	1.95±1.42
Limitation of food	15 (27.3)	6(10.9)	10 (18.2)	8 (14.5)	16 (29.1)	2.07±1.59
Limitation of fluid	15 (27.3)	6(10.9)	8 (14.5)	6 (10.9)	20 (36.4)	2.18±1.66
Job interference	22 (40)	10 (18.2)	4 (7.3)	8 (14.5)	11 (20)	1.56±1.60
Limitation of physical activities	5 (9.1)	6(10.9)	8 (14.5)	20 (36.4)	16 (29.1)	2.65±1.26
Sleep disturbances	19 (34.5)	3 (5.5)	9 (16.4)	7 (12.7)	17 (30.9)	2.00±1.68
Change in family responsibilities	17 (30.9)	10 (18.2)	4 (7.3)	8 (14.4)	16 (29.1)	1.93±1.66
Reversal in family role with spouse	18 (32.7)	8 (14.4)	9 (16.4)	9 (16.4)	11 (20)	1.76±1.55
Reversal in family role with children	32 (58.2)	0 (0)	3 (5.5)	10 (18.2)	10 (18.2)	1.38±1.70
Uncertainty about future	21 (38.2)	5 (9.1)	10 (18.2)	5 (9.1)	14 (25.5)	1.75±1.64
Changes in bodily appearance	17 (30.9)	9 (16.4)	7 (12.7)	8 (14.4)	14 (25.5)	1.87±1.61
Limitation in styles of clothing	30 (54.5)	11 (20)	6 (10.9)	5 (9.1)	3 (5.5)	0.91±1.23
Cost of treatment	7(12.7)	2 (3.6)	7 (12.7)	7 (12.7)	32 (58.2)	3.00±1.42
Limitations on time and place for vacation	10 (18.2)	11 (20)	7 (12.7)	5 (9.1)	22 (40)	2.33±1.59
Transportation to/from unit	19 (34.5)	10 (18.2)	2 (3.6)	7 (12.7)	17 (30.9)	1.87±1.72
Frequent hospital admissions	15 (27.3)	13 (23.6)	11 (20)	11 (20)	5 (9.1)	1.60±1.32
Dependency on doctors	21 (38.2)	23 (41.8)	7 (12.7)	3 (5.5)	1 (1.8)	0.91±0.94
Dependency on nurses and technicians	25 (45.5)	19 (34.5)	7 (12.7)	3 (5.5)	1 (1.8)	0.84±0.97
Fear of alone	22 (40)	2 (3.6)	9 (16.4)	14 (25.5)	8 (14.5)	1.71±1.56
Feelings related to treatment	18 (32.7)	11 (20)	9 (16.4)	9 (16.4)	8 (14.5)	1.60±1.46
Decreased sexual drive	38 (69.1)	5(9.1)	8 (14.5)	3 (5.5)	1 (1.8)	0.62±1.04
Decreased ability to procreate	48 (87.3)	1 (1.8)	2 (3.6)	4 (7.3)	0(0)	0.31±0.85

Table 4 displays the physiological and psychosocial stressors faced by the respondents. Among the physiological stressors, it is noted that, loss of bodily function was the highest stressor factors with mean score of 2.64 ± 1.45 . The second highest stressor was fatigue. Least stressor was arteriovenous fistula. Among the psychosocial factors, cost (treatment/transportation to treatment/or other cost factors) was noted as most frequently

stressors reported by 58.2% of the respondents with mean score of 3.00. Decreased ability to procreate was reported as stressors that cause no stress to 87.3%.

Among total stressors, cost factors was first stressors to cause high stress whereas decreased ability to procreate, decreased sexual drive, arteriovenous fistula were respectively first, second and third lowest stressors to cause no stress. The details are depicted in table 4.

Table 5: Mean Score of Physiological and Psychosocial Stressors (n=55)

Facets of stressors	Max obtainable score	Obtained range	Mean score \pm SD	Mean percentage score
Physiological	28	1-22	13.76 ± 4.97	49.15 ± 17.76
Psychosocial	88	2-68	36.80 ± 16.88	41.82 ± 19.19
Total score	116	3-85	50.56 ± 19.36	43.58 ± 16.69

Table 5 reveals the respondents' score on physiological and psychosocial stressors. Out of total obtainable score of 28, the domain physiological stressors had mean (SD) score of 13.76 ± 4.97 . Similarly in domain psychosocial stressors, out of total obtainable value of 88, the mean (SD) score was 36.80 ± 16.88 . Out of total score of 116, the mean score in respondents was 50.56 with standard deviation 19.36.

Table 6: Level of Stress among the Respondents (n=55)

Level of stress	Frequency	Percentage
Low stress	18	32.7
Average stress	34	61.8
High stress	3	5.5

Table 6 depicts that 61.8% of the respondents have average stress followed by 32.7% of respondents with low stress. Minority, 5.5% reports high level of stress with mean of 50.56.

Table 7: Association between Physiological, Psychosocial Stressors and Selected Socio-demographic Variables of the Respondents (n=55)

Variables	Category	Physiological stressors			Psychosocial stressors		
		\leq mean score (14)	> Score (14)	P value	\leq mean score (37)	>mean score (37)	P value
Age (in years)*	≤ 60	20(58.8)	14(41.2)	0.41	16(47.1)	18(52.9)	0.01
	>60	10(47.6)	11(52.4)		19(90.5)	2(9.5)	
Marital status**	Married	24(53.3)	21(46.7)	0.97	27(60)	18 (40)	0.40
	Other	6(60)	4 (40)		8 (80)	2 (20)	
Sex*	Female	12(63.2)	7 (36.8)	0.35	13(68.4)	6(31.6)	0.59
	Male	18(50)	18 (50)		22(61.1)	14(38.9)	
Educational Status**	Illiterate	5 (55.6)	4 (44.4)	1.00	7 (77.8)	2 (22.2)	0.55
	Literate	25(54.3)	21(45.7)		28(60.9)	18(39.1)	
Monthly Family income (in NRS.)*	<15000	6 (37.5)	10(62.5)	0.99	8(50)	8 (50)	0.31
	15000-25000	12(75)	4 (25)		10(62.5)	6 (37.5)	
	>25000	12(52.2)	11(47.8)		17 (73.9)	6 (26.1)	
Ethnicity*	Brahmin/Chhetri	6 (37.5)	10 (62.5)	0.25	10 (62.5)	6 (37.5)	0.47
	Janajati (Terai/Hills)	17 (63.0)	10(37.0)		19 (70.4)	8(29.6)	
	Other	7 (58.3)	5(41.7)		6 (50)	6 (50)	
Religion**	Hindu	24 (53.3)	21 (46.7)	0.97	29 (64.4)	16(35.6)	1.00
	Other	6 (60.0)	4 (40.0)		6 (60.0)	4 (40.0)	
Duration of diagnosis (In month)*	3 -12	9 (60)	6 (40)	0.61	8 (53.3)	7 (46.7)	0.33
	>12	21 (52.5)	19 (47.5)		27(67.5)	13(32.5)	
Duration of treatment (In month)*	3 -12	18 (64.3)	10 (35.7)	0.14	19 (67.9)	9 (32.1)	0.50
	>12	12 (44.4)	15 (55.6)		16 (59.3)	11(40.7)	
Financial support**	Yes	6 (54.5)	5 (45.5)	1.00	3 (27.3)	8 (72.7)	0.01
	No	24 (54.5)	20 (45.5)		32 (72.7)	12(27.3)	

* Chi square test, ** continuity corrected

Table 7 depicts that there is significant association of socio demographic variables mainly age of respondents (p value 0.01) with psychosocial stressors. It also shows significant association between

psychosocial stressors and financial support received by the respondents with p value of 0.01. But there is no significant association between selected variables with physiological stressors.

Table 8: Different Coping Strategies Adopted by the Respondents (n=55)

Coping strategies		Usually don't do No (%)	Usually do this a little bit No (%)	Usually do a medium amount No (%)	Usually do this a lot No (%)
Self distraction	turning to work or other activities to take mind off things	31(56.4)	6(10.9)	8(14.5)	10 (18.2)
	doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping	6 (10.9)	8 (14.5)	6(10.9)	35(63.6)
Active coping	concentrating efforts on doing something about the situation you're in.	19(34.5)	15(27.3)	10 (18.2)	11(20)
	taking action to try to make the situation better	18 (32.7)	10 (18.2)	16 (29.1)	11 (20)
Denial	saying to self "this isn't real."	39 (70.9)	10 (18.2)	5 (9.1)	1(1.8)
	refusing to believe that it has happened	38 (69.1)	8 (14.5)	1 (1.8)	8(14.5)
Substance Use	using alcohol or other drugs to make yourself feel better.	54 (98.2)	1 (1.8)	0	0
	using alcohol or other drugs to help to get through it.	55 (100)	0	0	0
Use of emotional support	getting emotional support from others	1 (1.8)	9 (16.4)	17 (30.9)	28 (50.9)
	getting comfort and understanding from someone	1(1.8)	4 (7.3)	34 (61.8)	16 (29.1)
Behavioural disengagement	giving up trying to deal with it.	26 (47.3)	6 (10.9)	10 (18.2)	13 (23.6)
	giving up the attempt to cope	17 (30.9)	16 (29.1)	5 (9.1)	17 (30.9)
Venting	expressing negative feelings.	20 (36.4)	8(14.5)	6 (10.9)	21 (38.2)
	saying things to let unpleasant feelings escape	19 (34.5)	7 (12.7)	3 (5.5)	26 (47.3)
Planning	trying to come up with a strategy about what to do.	27 (49.1)	12(21.8)	6 (10.9)	10 (18.2)
	thinking hard about what steps to take.	28 (50.9)	10 (18.2)	14 (25.5)	3 (5.5)
Use of instrumental support	getting help and advice from other people.	12 (21.8)	7 (12.7)	16 (29.1)	20 (36.4)
	trying to get advice or help from other people about what to do.	8 (14.5)	10 (18.2)	24 (43.6)	13 (23.6)
Positive Reframing	looking for something good in what is happening	22 (40)	14 (25.5)	14 (25.5)	5(9.1)
	trying to see it in a different light, to make it seem more positive	8 (14.5)	19 (34.5)	15 (27.3)	13 (23.6)
Self blame	criticizing yourself	29 (52.7)	12 (21.8)	5 (9.1)	9 (16.4)
	blaming yourself for things that happened	36 (65.5)	10 (18.2)	3 (5.5)	6 (10.9)
Humor	making fun of the situation.	5 (9.1)	11 (20.0)	13 (23.6)	26 (47.3)
	making jokes about it	9 (16.4)	5 (9.1)	15(27.3)	26 (47.3)
Acceptance	accepting the reality of the fact that it has happened.	3 (5.5)	6 (10.9)	7(12.7)	39 (70.9)
	learning to live with it.	1 (1.8)	11 (20.0)	12 (21.8)	31 (56.4)
Religion	praying or meditating.	25 (45.5)	5 (9.1)	6 (10.9)	19 (34.5)
	trying to find comfort in religion or spiritual beliefs.	18 (32.7)	7 (12.7)	2 (3.6)	28 (50.9)

Table 8 illustrates the coping strategies used by the respondents. 63.6 % of the respondents usually do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping a lot. Minimum respondents, 18.2% uses concentrating efforts on doing something about the situation in medium amount and taking action to try to make the situation better in little amount. More than 50% of respondents usually don't use denial and substance use as coping strategies. Seeking

emotional support is also used a lot by 50.9% of the respondents and getting comfort and understanding from someone is used in medium amount by 61.8% of the respondents. Behavioural disengagement and self blame are also least used coping strategies. More than two third (70.9%) of the respondents accepted the reality of the fact that it has happened and 56.4 % has learned to live with it. Details are depicted in table 8.

Table 9: Mean Score of Coping Strategies adopted by the Respondents (n=55)

Coping Strategies	Max obtainable value	Mean score ±SD
Acceptance	8	6.82 ± 1.41
Use of emotional support	8	6.49 ± 1.06
Humor	8	6.15 ± 1.71
Use of instrumental support	8	5.56 ± 1.75
Venting	8	5.16 ± 2.50
Self distraction	8	5.15 ± 1.72
Religion	8	5.07 ± 2.45
Positive Reframing	8	4.64 ± 1.55
Active coping	8	4.60 ± 2.01
Behavioural disengagement	8	4.58 ± 1.85
Planning	8	3.84 ± 1.81
Self blame	8	3.51 ± 1.75
Denial	8	3.04 ± 1.38
Substance Use	8	2.05 ± 0.40
Total coping strategies	112	66.65 ± 9.17 , Range (48- 93)

Table 9 shows mean score of coping strategies adopted by the respondents. This displays that all fourteen ways of coping strategies were used by the respondent which includes acceptance (6.82), use of emotional support (6.49), humor (6.15), use of instrumental support (5.56) venting (5.16), self distraction (5.15), religion (5.07), positive reframing (4.64), active coping (4.60), behavioural disengagement (4.58), planning (3.84), self blame (3.51), denial (3.04), substance use (2.05). The mean score of overall coping strategies was 66.65 with standard deviation 9.17.

Table 10: Association between Coping Strategies with the Selected Socio -demographic Variables of the Respondent (n=55)

Variables	Categories	Coping strategies		P value
		≤ mean score (67)	>mean score (67)	
Age (in years)*	≤ 60	16 (47.1)	18 (52.9)	0.46
	>60	12 (57.1)	9 (42.9)	
Sex*	Female	11 (57.9)	8 (42.1)	0.45
	Male	17 (47.2)	19 (52.8)	
Educational Status**	Illiterate	8 (88.9)	1 (11.1)	0.03
	Literate	20 (43.5)	26 (56.5)	
Ethnicity*	Brahmin/Chhetri	9 (56.3)	7 (43.8)	0.74
	Janajati(Terai / Hills)	14 (51.9)	13 (48.1)	
	Other	5 (41.7)	7 (58.3)	
Religion*	Hindu	21 (46.7)	24 (53.3)	0.32
	Others	7 (70.0)	3 (30.0)	
Monthly Family income (in NRS.)*	< 15000	8 (50.0)	8 (50.0)	0.98
	15000-25000	8 (50.0)	8 (50.0)	
	>25000	12(52.2)	11 (47.8)	
Duration of diagnosis of kidney disease (in months)*	3 -12	5 (33.3)	10 (66.7)	0.11
	>12	23 (57.5)	17 (42.5)	
Duration of treatment with HD (in months)*	3 -12	13 (46.4)	15 (53.6)	0.49
	>12 month	15 (53.6)	12 (44.4)	
Financial support*	Yes	4 (36.4)	7 (63.6)	0.28
	No	24 (54.5)	20 (45.5)	

* Chi square test ** Continuity corrected

Table 10 depicts there was significant association of educational status with coping strategies with p value 0.03 (< 0.05) while there was no significant association of coping strategies used by respondents with other socio-demographic variables.

Table 11: Correlation between Coping Strategies with Stressors and Stress (n=55)

Variables	Coping strategies	
	r value	P value
*Physiological stressors	-.13	0.33
*Psychosocial stressors	-.04	0.73
*Level of stress	-0.07	0.58

*Pearson correlation

Table 11 reveals that there was negative correlation between the coping strategies

and stressors, stress. It shows r value -0.13 for physiological stressors, - 0.04 for psychosocial stressors and -0.07 for total score of stress which is negatively associated with coping strategies whereas on obtaining P value, it showed that the value was 0.33, 0.73 and 0.58 respectively, considered not significant.

DISCUSSION

Present study showed that 61.8% of the respondents were of age 60 years and less. Their mean age is 54.40 ± 13.93. This finding is somehow near to the study conducted by Dang and other in regards to the mean age of the respondents which was

45.5 ± 14.9 years. [10] Likewise in the study conducted among Indonesians undergoing hemodialysis, mean age was 52.1 years. [11]

In current study, most (65.5%) of the respondents were male. This is in accordance with the status of chronic kidney disease patients registered in National Kidney Center, Banasthali, Kathmandu showing majority (64.6%) of male respondents. [12] This study is also similar to study “hemodialysis; psychosocial stressors in patients undergoing” where majority (65.9%) were male. [13] Males predominated in the majority of study and this suggests that maximum of the respondents receiving haemodialysis were male though this may not reflect the true distribution of kidney disease. However it shows the gender disparity in our society in terms of seeking health care.

By the educational status, 16.4% of the respondents were illiterate and remaining 83.6% were literate. Majority had education level of only primary and minority (4.3%) had received education upto bachelor and above. The findings are similar to the study done in Jordan where the lowest percentage education level in the study was above high school degrees i.e. 30.5%. [5] More than two third (81.8%) of the respondents were married and remaining were unmarried, widow / widower or separated. This finding is very near to the finding of the study conducted by Gorji et al. in which 88.8% of the participants were married. [9]

Among the total respondents, more than half, 61.8% of the respondents lived in joint family followed by nuclear family (38.2%) which is consistent to the findings where majority (80%) live in joint family. [14] There was presence of family members during haemodialysis. 92.72% had been in hospital with their spouse, siblings and children and remaining had been with their neighbor, nephew and uncle. Similarly the study “Coping strategies and socio-demographic characteristics among Jordanian caregivers of patients receiving hemodialysis”, different types of family

members cared for the haemodialysis patients, including the child (son or daughter, 44.9%) and the spouse and other relatives who comprises about 25% of the respondents. [15] Also on another study on “Physiological and Psychosocial Stressors among Haemodialysis Patients in Educational Hospitals of Northern Iran”, the majority of patients, i.e., 72.5% were under treatment with the support of family members. [9] Hence, family support may be the reason for not having high stress.

In current study, almost one third of the respondents (72.7%) were diagnosed from kidney disease for more than a year. Similarly, the study “Stressors and Coping strategies in dialysis patients” reveals 1 to 5 years of diagnosing renal failure in 58.6% of patients under haemodialysis. [16]

With regards to the financial support received, out of total respondents 80% of the respondents hadn't received any financial support other than government policy. 20 % of them had received financial support from their relatives, neighborhood and certain organization. Recent policy of Nepal to provide free haemodialysis services in government sectors is one of the major factors for respondents not to seek help from other. Previous study in Nepal also shows that very few of them were sponsored and managed by others means such as family support, street beg, help by relatives and others. [12]

Among the physiological and psychosocial stressors faced by the respondents, 58.2% reported cost factors to be first stressors to cause high stress with mean score of 3.00 followed by loss of bodily function with mean score of 2.64±1.45, fatigue (2.64±1.45), limitations on time and place for vacation (2.33±1.59). Least stressor was arteriovenous fistula (1.75±1.64) and 54.5% had reported no stress for limitation in styles of clothing. This result was consistent with the study done by Mahadeo Shinde, Supriya Patil Mane in which percentage of patients had reported always stress of cost factor, 90% had fear of transportation, along with 80%

had always stress of vacation limitations while 56.7% had sometimes stress of changes in bodily appearance and 16.7% had never stress of limited styles of clothing. [14] In similar study conducted on “Stressors and Coping Strategies in Haemodialysis Patients to determine relationships among treatment-related stressors and coping strategies of chronic haemodialysis patients”, the most frequent stressors reported are limitation of vacation (80.4%), followed by fatigue (79.9%) and uncertainty about future (79.0%). [17] The Study on “Stressors and coping strategies of 20-45-year-old haemodialysis patients “ is also in accordance with current study where the most frequently reported stressors were limitations of liquids, limitations of food, and fatigue. [18] Moreover, Tsay and colleagues, using the hemodialysis stressor scale (HSS) to assess 57 patients with ESRD in Taiwan, found the major stressors to be limitations on time and place related to employment, limitations on fluid intake, transportation difficulties, loss of bodily function, length of dialysis treatment, and limitation of physical activities. However this study does not find the cost factors and fatigue as the highest ranked stressor. [19] As our country is among developing countries and had low per capita income, this might be the reason for being the cost factors as the first stressors reported in current study.

Current study reveals that the domain physiological stressors had mean percentage score (SD) of 49.15 ± 17.76 . Similarly in domain psychosocial stressors, the mean percentage (SD) score was 41.82 ± 19.19 . This shows that the patients undergoing haemodialysis had more physiological stressors than compared with psychosocial stressor which was similar to the findings of the study conducted on Taiwanese patients undergoing haemodialysis. In that study it is found that they had more physiological stressors than psychosocial stressors. [18] This is also consistent with the findings of a study on “Relationship between quality of life and self-care ability in patients receiving

haemodialysis”, in which the result shows that haemodialysis patients had few problems in social dimension, but they had more problems in physical and psychological dimensions of quality of life. [20] In contrary, study conducted at Jordan shows that psychosocial stressors scores mean was higher than the physiological stressors mean among patients on haemodialysis. [5] Both physiological and psychosocial stressors were most commonly reported by the patients on haemodialysis in various studies. This difference can be due to different understanding of stressors because of social and cultural differences of the societies.

In current study, 61.8% of the respondents have average stress followed by 32.7% of respondents with low stress. Minority, 5.5% reports high level of stress. The finding is supported by study conducted by Muayyad M. Ahmada and Eman K. Al Nazly in which most of respondents show moderate level of stress. [5] In contrary to this study, the study done in India shows that about 97% patients undergoing haemodialysis had severe stress while 3% of patients had moderate stress among patients undergoing haemodialysis. [14] The duration of haemodialysis, provision of support groups, and offering information about haemodialysis care are factors that can greatly influence how much stress the patients feel.

In relation to the use of coping strategies, the frequently used methods were acceptance, use of emotional support, humor, use of instrumental support, self distraction, venting, religion, active coping, behavioral disengagement, positive reframing, planning, self blame, denial, substance use. Acceptance was most frequently used coping strategies used by the respondents a lot, similar to the study on “Coping methods to stress among patients on haemodialysis and peritoneal dialysis” where accepted the situation is second highest strategies used because very little could be done. [21] In contrast, the study on “Coping strategies and stressors in patients

with haemodialysis” support seeking is infrequently used coping strategy. In that study, avoidance is the most commonly used coping strategies in patients.^[22] Least used coping methods included turning into religion but the study on “Stress Coping Strategies in Haemodialysis and Kidney Transplant Patients”, turning to religion is the most frequent coping strategy followed by active coping, and positive reinterpretation.^[23] The study “Depression, Anxiety Disorders, Quality of Life and Stress Coping Strategies in Hemodialysis and Continuous Ambulatory Peritoneal Dialysis Patients”, aimed to assess patients with chronic kidney disease on haemodialysis or continuous ambulatory peritoneal dialysis (CAPD) and to compare them for depression, anxiety disorders, quality of life, and stress coping strategies identified the coping strategies most commonly used by the haemodialysis group were seeking of instrumental social support which is similar to the present study, followed by turning to religion contradictory to the current study and seeking of emotional social support.^[24]

In the Study on “Stressors and Coping strategies in dialysis patients” most of the used coping strategies is found to be respectively: praying, and trusting God which doesn’t support the current study. The least used coping strategies respectively includes smoking more than usual, taking medication for stress reduction and using relaxation techniques.^[16] These strategies were consistent with the present study as these were less adopted by the respondents.

In current study, there was significant association of age of respondents (p value 0.01) with psychosocial stressors and other socio demographics variable were not significant with the stressors. Similarly the study conducted in Iran also shows no significant statistical difference between the type of stressors and demographic variables of gender, marital status, education, occupation, duration of haemodialysis treatment but significant statistical

relationship between the stressors and age.^[16]

Coping strategies was found to be associated with educational status (p value 0.03). This finding is consistent with other study which revealed that the higher the level of education, the better the level of psychosocial coping.^[5]

There is negative correlation between the stress and coping strategies adopted by the patients undergoing maintenance haemodialysis. The finding is consistent with recent study on “Stressors and Coping Strategies in Haemodialysis Patients” which did not show any significant relationship between stressors and coping strategies.^[17]

CONCLUSION

The results demonstrated the most common physiological and psychosocial problems of haemodialysis patients which included costs, loss of bodily function, fatigue, limitation of time and place for vacation whereas decreased ability to procreate, decreased sexual drive, arterio venous fistula were factors to cause no stress as reported by maximum number of respondents. Coping strategies adopted by the patients undergoing haemodialysis were acceptance, use of emotional support, humor, use of instrumental support, self distraction and so on whereas substance use, denial, self blame were least used.

The association of socio demographic variables age of respondents with psychosocial stressors was significant at the level 0.05 (p value 0.01). It also showed significant association between psychosocial stressors and financial support received by the respondents with p value of 0.01. There was significant association of educational status with coping strategies with p value 0.03 (< 0.05) while there was no significant association of coping strategies used by respondents with other socio-demographic variables.

Findings of this study, which were stressors and coping mechanisms adopted by haemodialysis patients, can help the

nurses to design some interventions to facilitate coping with the stressors in patients. Also these results can help patients and their families to achieve useful coping skills by providing appropriate educational programs. Considering that nursing staff provides the most services for these patients, they can provide more support for them by better understanding of the haemodialysis patients' life to overcome their stresses and to have a higher quality of life. Being aware of the experienced stressors and effective coping strategies used by the haemodialysis patients, nurses can design appropriate interventions at the time of dialysis by considering the treatment. The findings of the study can also serve as a baseline data for concerned authority for conducting counseling, promoting educational programs for patients and families. However, Investigators found difficulty in gaining cooperation for the interview as some respondents expected direct benefits.

REFERENCES

1. Eissa MA, Sulaiman MA, Jondeby M, et al. Factors affecting Haemodialysis patients' satisfaction with their dialysis therapy. *International Journal of Nephrology* [Internet]. 2010 Oct [Cited 2016 May 16]; 2010 Article ID 342901; 5 pages. Available from: <http://www.hindawi.com/journals/ijn/2010/342901/> DOI:10.4061/2010/342901
2. Herlin, C, Hansson CW. The experience of being 30-45 years of age and depending on haemodialysis treatment: A phenomenological study. *Scandinavian Journal of Caring Sciences*. 2010; 24(4): 693-99.
3. Eghbali M, Babae S, Shahqolian N, et al. Comparing problems of patients with chronic renal failure undergoing haemodialysis and peritoneal dialysis referring to medical university's hospitals. *IJNMR*. 2008;14(1):1-5.
4. Bezerra KV, Santos, JL. Daily life of patients with chronic renal failure receiving haemodialysis treatment. *Rev lat Am Enfermagem*.2008; 16(4):686-91.
5. Ahmad MM, AL Nazly EK. Haemodialysis: Stressors and coping strategies. *Psychol Health Med* [Internet]. 2015 [cited 2019 may 31]; 20(4):477-87. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25158058> DOI: 10.1080/13548506.2014.952239
6. Kaze FF, Ashuntantang G, Kengne AP, et al. Acute haemodialysis complications in end-stage renal disease patients: The burden and implications for the under-resourced Sub-Saharan African health systems. *Hemodial int* [Internet]. 2012 Oct [cited 2016 may 16]; 16(4):526-31. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22541071>
7. Chhetri P, Manandhar D, Bhattarai S, et al. Chronic kidney disease 5 on haemodialysis in Nepal Medical College Teaching Hospital. *Nepal Med Coll J*. 2008; 10(1):8-10.
8. Baldree KS, Murphy SP. Stress Identification And Coping Patterns In Patients On Hemodialysis. *Nurs Res*. 1982; 1(2):107-12.
9. Gorji M.A, Mahdavi A, Janati Y, et al. Physiological and psychosocial stressors among Haemodialysis patients in educational hospitals of northern Iran. *Indian j palliat care*. 2013; 19(3):166-169.
10. Dang T.L, Lai F.C, Lin Y.K, et al. Psychometric Evaluation of the Vietnamese Hemodialysis Stressor Scale. *Clinical Nursing Research* [Internet].2016 [cited 2019 Feb 22];27(3):364-85. Available from: <https://journals.sagepub.com/doi/abs/10.1177/10547738166631724> DOI: 10.1177/10547738166631724.
11. Ibrahim K, Taboonpong S, Nilmanat K. Coping and Quality of Life among Indonesians Undergoing Hemodialysis. *Thai J Nurs Res*. 2009; 3(2):109 -117.
12. Mishra D. Status of Chronic Kidney Disease Patients Registered in National Kidney Center, Banasthali, Kathmandu. *JMMIHS*. 2015; 1(4):19-23.
13. Leghari NU, Amin R, Akram B, et al. Hemodialysis; psychosocial stressors in patients undergoing. *Professional med j*.2015; 22(6):762-766.
14. Shinde MB, Mane SP. Stressors and the Coping Strategies among Patients Undergoing Haemodialysis. *IJSR*. 2014; 3(2):266-276.

15. Alnazly E. Coping strategies and socio-demographic characteristics among Jordanian caregivers of patients receiving haemodialysis. *Saudi Journal of Kidney Diseases and Transplantation* [Internet]. 2016 [cited 2017 May 18]; 27(1):101. Available from: <http://www.sjkdt.org/article.asp?Issn=13192442;year=2016;volume=27;issue=1;spage=101;epage=106;aulast=Alnazly> DOI: 10.4103/1319-2442.174088
16. Shahrokhi Z, Rayyani M, Sabzevari S, et al. Stressors and Coping strategies in dialysis patients. *Iran J critical care Nursing*. 2014; 7(3):184–193.
17. Cinar S, Barlas GU, Alpar SE. Stressors and Coping Strategies in Haemodialysis Patients. *Pakistan journal of Medical sciences*. 2009 June; 25(3): 447-52.
18. Tu HY, Shao JH, Wu FJ, et al. Stressors and coping strategies of 20–45-year-old haemodialysis patients. *Collegian*. 2014; 21(3):185–192.
19. Tsay SL, Lee YC. Effects of An Adaptation Training Programme For Patients With End-Stage Renal Disease. *Journal of Advanced Nursing*. 2005; 50 (1):39-46.
20. Heidarzadeh M, Atashpeikar S, Jalilazar T. Relationship between quality of life and self-care ability in patients receiving haemodialysis. *Iran J nurs midwifery Res*. 2010; 15(2): 71–76.
21. Parvan K, Ahangar R, Hosseini FA, et al. Coping Methods To Stress Among Patients On Hemodialysis And Peritoneal Dialysis. *Saudi Journal of Kidney Diseases and Transplantation*. 2015; 26(2):255-262.
22. Yeh S, Chou H. Coping strategies and stressors in patients with haemodialysis. *Psychosomatic medicine*. 2007; 69(2):182–90.
23. Gurkan A, Pakyuz SC, Demir T. Stress coping strategies in Haemodialysis and kidney transplant patients. *Transplantation proceedings*. 2015; 47(5):1392–7.
24. Baykan H, Yargic I. Depression, Anxiety Disorders, Quality of Life and Stress Coping Strategies in Hemodialysis and Continuous Ambulatory Peritoneal Dialysis Patients. *Bulletin of Clinical Psychopharmacology*. 2012; 22(2):167-76.

How to cite this article: Neupane N, Parajuli P, Mehta RS et.al. Stressors and coping strategies among the patients undergoing maintenance haemodialysis at B.P. Koirala institute of health sciences. *Int J Health Sci Res*. 2019; 9(6):180-192.
