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ILLNESS COGNITION AND PERCEIVED STRESS AMONG ESRD PATIENTS UNDERGOING HEMODIALYSIS

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ABSTRACT

Chronic disease of the kidney is an important cause of global mortality and morbidity. It has become a fast-expanding global problem related to health in all nations. End-stage renal disease is a complex, progressive, and debilitating illness that affects a patient's quality of life, physical and mental health, well-being, social functioning, and emotional health. Chronic kidney failure causes many limitations for patients. Despite the effectiveness of hemodialysis, this method causes mental problems and frustration in patients. In the present study, the investigator aimed to assess the level of Illness cognition and Perceived stress among patients undergoing Hemodialysis. The researcher adopted a Descriptive Research design, and the data was collected through a questionnaire. Simple random sampling was used. A hundred samples were collected from the Hospital and the dialysis center, Illness cognition and Perceived stress scale were used to collect the Data. There will be a positive relationship between Illness cognition and Perceived stress among patients undergoing Hemodialysis.

KEYWORDS: *CKD, ESRD, Illness cognition and Perceived stress.*

INTRODUCTION:

Chronic kidney disease (CKD), also called chronic kidney failure, involves a gradual loss of kidney function. CKD is associated with an increased risk of end-stage renal disease (ESRD), chronic disease of the kidney is an important cause of global mortality and morbidity .it has become a fast-expanding global problem related to health in all nations. CKD based on the estimated GFR, the fifth stage is end-stage renal failure, where the GFR falls below 15 ml/mt. World Health Organization has ranked CKD as the tent major cause of death in their bulletin. It is predicted that the incidence of CKD will rise further and can become the fifth leading cause of years of life lost by 2040. Approximately 15% of the adult population in the US is affected by CKD. The terminal stage of CKD is represented by end-stage renal disease (ESRD). The treatment for ESRD involves costly therapy like dialysis and renal replacement therapy (RRT). approximately 152 people/ million population are affected by end-stage renal disease. after considering the mean of the mentioned figure, ten approximately 220,000 patients require kidney transplantation in India. In opposition to these 7500 kidney transplantations are carried out in India at around 250 centers for kidney transplant According to the Organ and Tissue Transplantation Organization,5,486 kidney transplants were done in India and 792 kidney transplants in Delhi in the year 2020. after the US India has the largest living kidney transplantation program in numbers.

Stages of Chronic Kidney Disease:

- Stage 1 with normal or high GFR (GFR>90 ml/min)
- Stage 2 Mild CKD (GFR=60-89 ml/min)
- Stage 3A Moderate CKD (GFR=45-59 ml/min)
- Stage 3B Moderate CKD (GFR=30-44 ml/min)
- Stage 4 Severe CKD (GFR=15-29 ml/min)
- Stage 5 End stage CKD (GFR<15 ml/min)

HEMODIALYSIS:

Hemodialysis is one of the renal replacement therapies that filters waste, removes extra fluid, and balances electrolytes such as sodium, potassium, bicarbonate, chloride calcium, magnesium, and phosphate. Hemodialysis can be performed in a dialysis center or hospital by trained healthcare professionals. A special type of venous access called an Arteriovenous (AV) fistula is placed surgically usually in the arm. This involves joining an artery and a vein together, an external central, intravenous, (IV)catheter may also be inserted but is less common for long-term dialysis after access has been established, it will be connected to a large hemodialysis machine that drains the blood, Dialysate bath is a special solution which removes waste substances and fluid, then returns it to the bloodstream, Hemodialysis is usually performed thrice or twice a week and lasts for four to five hours.

ILLNESS COGNITION:

Illness cognitions refer to 'individuals' common sense definition to health threats'(Leventhal et al,,1998,p.719),and the patient's perception and understanding of the disease and treatment'(Leventhal et al,,1986,p,176),concepts used as synonyms are illness belief ,illness perceptions ,illness representations, illness schemata and lay beliefs about illness (Scharloo & Kapltein,1997).The concept of illness cognitions and related concepts such as appraisals ,illness beliefs, or illness perceptions refer to the way people think about and perceive their disease.

illness cognition is important because they can influence how a person copes with and adjusts to an illness. they can also impact a person's subsequent behaviours, such as how they care for themselves, how often they use health care and how they adhere to treatment.

PERCEIVED STRESS.

Perceived stress is the amount of stress a person perceives based on his or her thoughts or feelings at a given moment or over a period of time. It is a feeling about life events that are beyond one's control. stress is also used to refer to the cognitive, emotional and biological reactions. when faced with a health threat, an individual forms cognitive and emotional perceptions about the illness. According to Hans selye". Stress is the salt of life," which means stress is the very adequate factor in life but, if it exceeds beyond a limit, it will be destructive in nature. the outcome of stress can be determined by the way an individual respond to stressful events. Stress can affect the physical and psychological wellbeing of individuals.

NEED FOR THE STUDY

The end-stage renal disease occurs when the gradual loss of kidney function reaches an advanced state and kidneys are no longer able to work to meet the body's needs. Hemodialysis is considered as the most widely used therapy and plays an essential role in increasing a patient's lifetime. Hemodialysis patients are significantly less active than healthy, sedentary individuals (Johansen,2000), and their physical deterioration is independently associated with

decreased illness cognition, and perceived stress, the present study aimed to identify the level of illness cognition and perceived stress among patients undergoing Hemodialysis.

REVIEW OF LITERATURE:

Review of literature is a key step in the research process. A review of literature is a comprehensive assessment that includes all the relevant research and supporting documents in print. The literature review is essential to locate similar or related studies that have already been completed which may help the investigator to develop deeper insight into the problem and gain information about the existing studies.

The purpose of reviewing related literature, in any field, helps the individual to gain information about what has already been investigated, the methodology used, the conclusions arrived and what more needs to be done in the future. This chapter reviews some of the literature which is relevant and useful to the present study in identifying and focusing attention on the problem, analysis, and interpretation of data. The literature reviewed, related to the present study, is organized and presented under the following sections:

Section I: Literature related to ESRD.

Radhakrishnan (2017) conducted a prospective study of 127 ESRD patients on dialysis between January 2013 and December 2014 in rural south India. The results of the study indicated that a total of 101 males and 26 females with a mean age of 50.05±13.80 years participated in this study. A total of 87.4% of dialysis patients had emergency dialysis, 6.30% of patients had started dialysis with an arteriovenous Venous Fistula while 93.70% with a temporary catheter. The study results also showed that 3.94% were transferred to other centers, 16.54% died, 0.79% underwent transplantation, 33.07% continued hemodialysis and a majority 45.67% had stopped dialysis. The findings also inferred that, sepsis as the most common cause of death. The Kaplan-Meier analyses showed the median survival time on dialysis as 64 days. The authors concluded that the patients initiated on hemodialysis in rural areas often present late with poor pre-dialysis care leading to high morbidity.

Ravikumar P, et al. (2019) conducted a community-based cross-sectional study to identify the prevalence of chronic kidney disease (CKD) and its determinants among adults in Rural Pondicherry, India. A sample of 422 adults aged to 50 years from both genders, were selected by population proportional to size method in 13 villages covering 32265 population of Primary Health Centre in rural Pondicherry between January 2016 to September 2017.

The results of this study showed that 73.5% of the CKD cases were at stage two, 15% of them at stage 3a, and 2% of them in stage 3b. The determinants of CKD were (60 to 69 years, PR:2.36, CI:1.36-4.07), poor nutrition and poor nutritional status (underweight: PR:2.26, CI:1.05-4.89), (overweight: PR:2.19, CI:1.06-4.5), obese (PR:2.13, CI:1.13-4.01), and presence of chronic co-morbidity (PR:5.85, CI:1.38-24.78). The authors concluded that due to a higher prevalence of CKD in the study area, targeted screening of the adult population like early detection, diagnosis, treatment, and follow-up would prevent further progression of CKD.

Crews and Bello (2019) conducted a study on the burden, assessment, and disparities in kidney diseases. In this study, the authors identified that kidney disease is a global public health problem that affects more than 750 million people worldwide. The burden of kidney disease varies substantially across the world, as does its detection and treatment. The magnitude and impact of kidney diseases are better defined in developed countries; emerging evidence suggests that developing countries have a similar or even greater kidney disease burden. The

authors concluded that the provision and delivery of kidney care vary widely across the world. Achieving universal health coverage, worldwide, by 2030 is one of the WHO sustainable developmental goals. The universal health coverage may not include all the elements of kidney care in all countries (because this is usually a function of political, economic, and cultural factors), understanding what is feasible and important for a country or region with a focus on reducing the burden and consequences of kidney diseases would be an important step towards achieving kidney health equity.

Carney (2020) conducted a study on the impact of chronic kidney disease on global health. The main aim of this global burden of disease study was to provide policymakers worldwide with up-to-date information on health outcomes that are comparable between diseases, combining information on death and non-fatal disease. In 2017, CKD resulted in 1.2 million deaths and was the 12th leading cause of death worldwide. Totally, 7.6% of all cardiovascular deaths (1.4 million) could be attributed to impaired kidney function. Deaths due to CKD can be attributed to cardiovascular disease (CVD) which is nearly 4.6% of all causes of mortality. Global all-age CKD mortality increased by 41.5% between 1990 and 2017, whereas age-standardized CKD mortality remained stable. This author also estimated that in 2017 CKD resulted in 35.8 million lifelong disability-adjusted, whereas 25.3 million CVD lifelong disabilities could be attributed to impaired kidney diseases.

Further, the author suggested early CKD detection and prevention in high-risk groups as well as the provision of essential medicines for patients with CKD.

activity and its function in patients with chronic kidney disease. The studies have shown the beneficial effects of physical activities and exercise for primary and secondary prevention of non-communicable diseases. The authors found that the assessment and monitoring of physical function among ESRD patients as very fragile. The authors also suggested that a large variation of different methods for assessing physical function and physical activity in clinical practice and research settings would be essential to maintain the optimum level of health among ESRD subjects.

SECTION-ll REVIEW OF LITERATURE RELATED TO ILLNESS COGNITION:

K Griva,D Jayasena,A Davenport, (2009) conducted a study on illness and treatment cognitions and health related quality of life in end stage renal disease. A cross-sectional sample of 262 ESRD patients,145 dialysis and 117 kidney transplant recipients participated, the result was health quality of life levels were higher in transplant patients. Dialysis patients reported more symptoms associated with ESRD (p stronger chronic timeline beliefs(p lower control beliefs (p and more illness and treatment disruptiveness (ps. Illness and treatment disruptiveness, consequences and identity were inversely associated with HQol whereas control was positively associated with HQol.

Esperanza velez-velez, Ricardo J Bosch (2016) conducted a study on illness perception and adherence to treatment among patients with chronic kidney disease with a sample of 135 patients on hemodialysis the result was being a woman, have a greater knowledge of the disease and having a poorer sense of personal control affected adherence to treatment on controlling for each factor. Identity, personal control, and adherence were associated with a proactive coping strategy, whereas evolution and gender were related independently to avoidance coping strategies: those who believed that their illness had a chronic course were more likely to cope by avoiding the problem and this tendency was stronger among women.

Mary Kalfoss, kara Schick-Makaroff, Anita E Molzahn (2019) conducted a study on living with chronic kidney disease: illness perceptions, symptoms, coping and quality of life, with the Sample of 42 individuals on dialysis and with renal transplant, the result was illness intrusiveness was highly disruptive to one's financial situation, health and work. intrusiveness was also significantly related to individual symptoms, especially tiredness, feeling of well-being and sleep. correlations between intrusiveness and QoL were significant. Emotional-focused coping strategies were also significantly associated with intrusiveness. Health professionals can target illness perceptions, symptom burden and coping strategies to enhance QoL.

Priscilla Muscat, John Weinman, Emanuel Farrugia, Roberta Callus, Joseph Chilcot (2021) conducted a study on illness perceptions predict distress in patients with chronic kidney disease, a sample of 200 patients diagnosed with chronic kidney disease were recruited for this study. the result was A percentage of 33.5% of the participants reported severe distress. Illne ss perception contributed significantly to distress over and above the clinical kidney factors. Illness perceptions accounted for the greatest variance in distress thus indicating that the contribution of illness perceptions is greater than that made by the other known covariates.

Man Zhang,Siman Nie,Ziwei Hai,Yixin Du,Menghan Jiang,Chunfeng Cai (2024) conducted Across-sectional study on Effects of illness perception and coping style on self-management in peritoneal Dialysis patients, a convenience sampling method was used to recruit 246 peritoneal dialysis patients, the result was illness perceptions were negatively significantly correlated with self-management. confrontation and avoidance were positively related to self-management, while acceptance-resignation was negatively related.

SECTION-lll REVIEW OF LITERATURE RELATED TO PERCEIVED STRESS:

Pedro Garcia-Martinez, Rafael Ballester-Arnal, Kavita Gandhi-Morar Jesus Castro –Calyo (2021) conducted a study on perceived stress in relation to quality of life and resilience in patients with advanced chronic kidney disease undergoing hemodialysis. this was a multicenter and cross-sectional study involving 144 patients from the valencian community (spain),the result was employement status ($p=0.003$),resilience ($p<0.001$),and quality of life ($p<0.001$) were shown to be significantly related to perceived stress The regression models determined that health-related quality of life and resilience explained up to 27.1% of the variance of total PSS 10 score.

Dilek Barutcu Atas, Esra Aydin Sunbul,Arzu Velioglu, Serhan Tuglular (2021), conducted a study on The association between perceived stress with sleep quality, insomnia, anxiety and depression in kidney transplant recipients during Covid-19 pandemic. A hundred-six kidney transplant recipients were enrolled. The result was the high PSS were positively correlated with PSQI, ISI, HAD-A, HAD-D. Regression analyses revealed that high-perceived stress is an independent predictor of anxiety and depression. there was not significant difference between kidney function with PSS, PSQI, ISI, HAD-A, HAD-D.

Maryam Zibaei, Monir Nobahar, Raheb Ghorbani (2020) conducted a study on Association of stress and anxiety with self-care in hemodialysis patients the cross-sectional study was conducted on 80 hemodialysis patients, selected by convenience sampling method. the result was there was a significant negative correlation between the perceived stress score and the self-care score ($p=0.001$, $r=0.376$), however no correlation was observed between anxiety and self-care score ($p=0.089$, $r=0.193$).

RESEARCH GAP:

The End Stage Renal Disease (ESRD) is a very important factor for increasing mortality and morbidity in non-communicable diseases. The number of ESRD people undergoing dialysis and renal replacement therapies has increased to 2.5 million and it is expected to increase to 5.4 million in 2030, The impact of Kidney disease varies significantly across the earth, Although there are many unanswered questions on how to manage patients with ESRD, on their psychological aspects, some studies are conducted in India when compared to the foreign countries on the psychological aspects in the recent years.

Research Objectives:

1) To analyze the level of Illness cognition and perceived stress among patients undergoing Hemodialysis, with respect to their profile characteristics.

2) To investigate the relationship between Illness cognition and perceived stress. Among patients undergoing Hemodialysis.

Research Methodology:

RESEARCH DESIGN:

The present study adopted Descriptive research design.it is a fact-finding inquiry with adequate interpretation. This study tries to describe and explore the relationship between Illness cognition and perceived stress among hemodialysis patients.

SAMPLING METHOD:

The researcher adopted a simple random sampling technique, For the selection of samples The Data was collected using a questionnaire.

SAMPLE SIZE:

100 samples were collected.

INCLUSION CRITERIA:

1. All HD patients
2. Patients Age >35years <75 years.
3. Interested people who are willing to participate in the present study.
4. Do not suffer from psychiatric illness
5. Being conscious and cooperative.

EXCLUSION CRITERIA:

1. Patients who declined to answer the questionnaire.
2. patients with other chronic illnesses such as heart diseases.
3. Those patients who had voluntarily withdrawn from Dialysis.
4. Those with severe illness or psychosis and pregnant and lactating women were excluded.
5. Patients suffering from hearing and speech problems.

TOOLS OF DATA COLLECTION:

The questionnaire was used as a tool for the purpose of collecting Data from the respondents. the questionnaire comprises four parts,1. personal details,2. Illness cognition questionnare,3. Perceived stress. The researcher used the following scales for data collection.

ILLNESS COGNITION QUESTIONNAIRE ------A.W.M.Evers & F.W.Kraaimaat(1998)

PERCEIVED STRESS SCALE-Cohen et al,1983

ILLNESS COGNITION QUESTIONNAIRE-1998

The Illness Cognition (ICQ) is a self-administered tool that assess how people with chronic conditions perceive themselves. The ICQ is scored by adding up the item scores for each of the

three domains: acceptance, perceived benefits, and helplessness. each domain has six items, each item is scored on a Likert scale from 1 to 4, with meaning "not at all" and 4 meaning "completely". The domain score ranges from 6 to 24 with higher scores indicating a greater presence of the illness cognition.

PERCEIVED STRESS SCALE(PSS)

The PSS (10-item version) is a standardized self-report questionnaire of globally perceived stress. six of the items are negative and the remaining 4 are positive. each item was rated for the past month on a 4-point Likert-type scale (0=never to 4=very often).0 (never),1 (almost never0,2 (sometimes),3 (fairly often) or 4 (very often). All the items are summed (range from 9 to 40).A higher total score indicates greater stress.

Limitations:

- The study is limited to the subjects with ESRD stage 5 as per the glomerular filtration rate.
- The study is limited to subjects with ESRD undergoing hemodialysis from selected hospitals and Dialysis centers at Neyveli.
- The study is limited to a small sample size of 100.

RESULT AND DISCUSSIONS:

Frequency Table

Table 1: Showing the percentage distribution of the demographic variable of dialysis patients

Variables	Sub variables	Percentage (N=100)
Gender	Male	83
	Female	17
Age	35-55	76
	56-74	20
	75 & above	4
Marital status	Married	92
	Unmarried	8
Family Income	5000-25000	25
	25001-40000	33
	40001 and above	42
	sedentary	37

Occupation	Moderate	36
	Heavy	11
	Unemployed	16
Education	Secondary school	16
	Diploma	42
	Undergraduate	34
	Postgraduate	8
Residence	Rural	47
	Urban	53
Duration	Below 5 years	78
	5-10 years	18
	Above 10 years	4

The sample consisted primarily of male participants (83%) and individuals aged 35 to 55 years (76%), indicating a middle-aged demographic. A majority of the participants were married (92%), with a smaller proportion being unmarried (8%). In terms of family income, most participants earned above 40,000 (42%), while 33% earned between 25,001 and 40,000, and 25% earned between 5,000 and 25,000. Occupationally, the sample was divided between sedentary (37%) and moderately active jobs (36%), with 16% unemployed and 11% engaged in heavy labour. Regarding education, 42% held a diploma, 34% had an undergraduate degree, and 8% had completed postgraduate education. The sample was fairly evenly distributed between rural (47%) and urban (53%) residents. Additionally, most participants (78%) had been in their current roles or residences for fewer than five years, suggesting a relatively mobile group. Overall, the sample reflects a predominantly middle-aged, male, and well-educated population with a relatively high income and a balance between urban and rural living.

Table 2: Showing the Independent sample t-test for Illness cognition with respect to demographic variables

Variables	**Sub variables**	**N**	**Mean**	**Standard Deviation**	**t-value**	**Sig value**
Gender	Male	83	51.24	10.39	.713	.478
	Female	17	34.88	7.80		
Residence	Rural	47	47.60	11.48	.883	.379

	urban	53	49.66	11.83		
Marital status	Married	92	48.78	11.59	.240	.817
	Unmarried	8	47.63	13.22		

For **gender**, the analysis showed no significant difference between male and female participants. Male participants (n = 83) had a mean score of 51.24 (SD = 10.39), while female participants (n = 17) had a mean score of 34.88 (SD = 7.80). The t-test yielded a t-value of 0.713 with a p-value of 0.478, indicating that gender does not significantly affect the variable being measured.

For **residence**, the comparison between rural and urban participants also revealed no significant difference. Participants living in rural areas (n = 47) had a mean score of 47.60 (SD = 11.48), while those living in urban areas (n = 53) had a mean score of 49.66 (SD = 11.83). The t-value was 0.883, with a p-value of 0.379, suggesting that residence type does not significantly influence the measured variable.

For **marital status**, the analysis indicated no significant difference between married and unmarried participants. Married participants (n = 92) had a mean score of 48.78 (SD = 11.59), while unmarried participants (n = 8) had a mean score of 47.63 (SD = 13.22). The t-test produced a t-value of 0.240 and a p-value of 0.817, which suggests that marital status does not have a statistically significant impact on the variable under consideration.

Table 3: Showing the Independent sample t-test for Perceived stress with respect to demographic variables

Variables	Sub variables	N	Mean	Standard Deviation	t-value	Sig value
Gender	Male	83	23.73	5.19		.400
	Female	17	31.19	4.16	.846	
Residence	Rural	47	25.02	5.44	.216	.829
	urban	53	24.77	6.00		
Marital status	Married	92	24.90	5.74		.946
	Unmarried	8	24.75	5.89	.070	

For **gender**, the results showed no significant difference between male and female participants. Male participants (n = 83) had a mean score of 23.73 (SD = 5.19), while female participants (n = 17) had a mean score of 31.19 (SD = 4.16). The t-test yielded a t-value of 0.846 with a p-value of 0.400, indicating that gender does not significantly affect the measured variable.

For **residence**, the comparison between rural and urban participants revealed no significant difference. Participants living in rural areas (n = 47) had a mean score of 25.02 (SD = 5.44), while those living in urban areas (n = 53) had a mean score of 24.77 (SD = 6.00). The t-value was 0.216, with a p-value of 0.829, suggesting that residence type does not significantly influence the measured variable.

For **marital status**, the analysis also indicated no significant difference between married and unmarried participants. Married participants (n = 92) had a mean score of 24.90 (SD = 5.74), while unmarried participants (n = 8) had a mean score of 24.75 (SD = 5.89). The t-test produced

a t-value of 0.070 and a p-value of 0.946, indicating that marital status does not have a statistically significant impact on the variable being measured.

Table 4: Showing the one-way ANOVA for Illness cognition with respect to demographic variables

Variables	Sub variables	N	Mean	Standard Deviation	F-value	Sig value
Family Income	5000-25000	25	35.48	8.56	95.02	.001
	25001-40000	33	45.85	7.37		
	40001 and above	42	58.79	5.04		
Education	Secondary school	16	31.56	2.63	60.78	.001
	Diploma	42	45.93	8.53		
	Undergraduate	34	56.97	6.82		
	Postgraduate	8	62.25	1.28		
Duration	Below 5 years	78	49.22	11.57	.361	.698
	5-10 years	18	46.89	11.80		
	Above 10 years	4	46.50	15.06		
Occupation	sedentary	37	59.19	4.83	66.92	.001
	Moderate	36	47.97	7.17		
	Heavy	11	32.55	4.00		
	Unemployed	16	37.13	10.15		
Age	35-55	76	49.63	11.55	1.48	.233
	56-74	20	46.70	11.47		
	75 & above	4	40.75	13.52		

For **family income**, significant differences were found between the income groups. Participants earning between 5,000 and 25,000 (n = 25) had a mean score of 35.48 (SD = 8.56), those earning between 25,001 and 40,000 (n = 33) had a mean score of 45.85 (SD = 7.37), and those earning 40,001 and above (n = 42) had a mean score of 58.79 (SD = 5.04). The F-value was 95.02 with a p-value of 0.001, indicating that family income significantly affects the measured variable.

For **education**, significant differences were also observed across education levels. Participants with secondary school education (n = 16) had a mean score of 31.56 (SD = 2.63), those with a diploma (n = 42) had a mean score of 45.93 (SD = 8.53), those with an undergraduate degree (n = 34) had a mean score of 56.97 (SD = 6.82), and participants with a postgraduate degree (n = 8) had a mean score of 62.25 (SD = 1.28). The F-value was 60.78 with a p-value of 0.001, showing that education level significantly impacts the variable.

For **duration** (length of time in the current role or situation), no significant differences were found. Participants who had been in their current role for less than 5 years (n = 78) had a mean score of 49.22 (SD = 11.57), those in the 5-10 years range (n = 18) had a mean score of 46.89 (SD = 11.80), and those with more than 10 years of experience (n = 4) had a mean score of 46.50 (SD = 15.06). The F-value was 0.361 with a p-value of 0.698, indicating no significant effect of duration on the measured variable.

For **occupation**, significant differences were found across different activity levels. Participants with sedentary jobs (n = 37) had a mean score of 59.19 (SD = 4.83), those with moderate activity (n = 36) had a mean score of 47.97 (SD = 7.17), those with heavy labor (n = 11) had a mean score of 32.55 (SD = 4.00), and unemployed participants (n = 16) had a mean score of 37.13 (SD = 10.15). The F-value was 66.92 with a p-value of 0.001, indicating that occupation significantly affects the variable being measured.

For **age**, no significant differences were observed. Participants aged 35-55 years (n = 76) had a mean score of 49.63 (SD = 11.55), those aged 56-74 years (n = 20) had a mean score of 46.70 (SD = 11.47), and participants aged 75 and above (n = 4) had a mean score of 40.75 (SD = 13.52). The F-value was 1.48 with a p-value of 0.233, suggesting that age does not significantly influence the measured variable.

Table 5: Showing the one-way ANOVA for Perceived stress with respect to demographic variables

Variables	Sub variables	N	Mean	Standard Deviation	F-value	Sig value
Family Income	5000-25000	25	30.68	4.27	47.14	.001
	25001-40000	33	25.82	3.86		
	40001 and above	42	20.71	4.21		
Education	Secondary school	16	32.69	1.74	33.71	.001
	Diploma	42	25.57	4.40		
	Undergraduate	34	22.03	4.64		
	Postgraduate	8	17.88	2.03		
Duration	Below 5 years	78	24.64	5.76	.408	.666
	5-10 years	18	26.00	5.56		
	Above 10 years	4	24.75	6.70		
Occupation	sedentary	37	20.68	4.35	29.36	.001
	Moderate	36	24.94	4.05		
	Heavy	11	31.55	1.86		
	Unemployed	16	29.94	5.14		
Age	35-55	76	24.41	5.86	1.15	.320
	56-74	20	26.30	5.00		
	75 & above	4	27.00	6.05		

For **family income**, significant differences were found across income groups. Participants earning between 5,000 and 25,000 (n = 25) had a mean score of 30.68 (SD = 4.27), those earning between 25,001 and 40,000 (n = 33) had a mean score of 25.82 (SD = 3.86), and those earning 40,001 and above (n = 42) had a mean score of 20.71 (SD = 4.21). The F-value was 47.14 with a p-value of 0.001, indicating that family income significantly influences the variable being measured.

For **education**, significant differences were also found between education levels. Participants with secondary school education (n = 16) had a mean score of 32.69 (SD = 1.74), those with a diploma (n = 42) had a mean score of 25.57 (SD = 4.40), those with an undergraduate degree (n = 34) had a mean score of 22.03 (SD = 4.64), and those with a postgraduate degree (n = 8)

had a mean score of 17.88 (SD = 2.03). The F-value was 33.71 with a p-value of 0.001, showing that education level has a significant effect on the measured variable.

For **duration** (length of time in the current role or situation), no significant differences were observed. Participants who had been in their current role for less than 5 years (n = 78) had a mean score of 24.64 (SD = 5.76), those in the 5-10 years range (n = 18) had a mean score of 26.00 (SD = 5.56), and those with more than 10 years of experience (n = 4) had a mean score of 24.75 (SD = 6.70). The F-value was 0.408 with a p-value of 0.666, suggesting that duration does not significantly affect the variable.

For **occupation**, significant differences were found between different levels of occupational activity. Participants with sedentary jobs (n = 37) had a mean score of 20.68 (SD = 4.35), those with moderate activity jobs (n = 36) had a mean score of 24.94 (SD = 4.05), those in heavy labor (n = 11) had a mean score of 31.55 (SD = 1.86), and unemployed participants (n = 16) had a mean score of 29.94 (SD = 5.14). The F-value was 29.36 with a p-value of 0.001, indicating that occupation significantly influences the measured variable.

For **age**, no significant differences were found across age groups. Participants aged 35-55 years (n = 76) had a mean score of 24.41 (SD = 5.86), those aged 56-74 years (n = 20) had a mean score of 26.30 (SD = 5.00), and those aged 75 and above (n = 4) had a mean score of 27.00 (SD = 6.05). The F-value was 1.15 with a p-value of 0.320, indicating that age does not significantly impact the measured variable.

Table 6: Pearson Correlational Analysis for Illness cognition and Perceived stress among dialysis patients

Variables	Perceived stress
Illness Cognition	**-.864****

*** Correlation is significant at 0.01 levels*

The Pearson correlation analysis revealed a strong negative correlation between illness cognition and perceived stress among dialysis patients ($r = -0.864$, $p < 0.01$). This suggests that as dialysis patients' illness cognition increases, their perceived stress tends to decrease. The negative direction of the correlation implies that those who have a more comprehensive understanding or cognitive awareness of their illness are likely to experience lower levels of stress. The correlation is highly significant at the 0.01 level, highlighting the strength and reliability of the relationship between these two variables. This suggests that illness cognition could play a crucial role in managing or mitigating perceived stress in dialysis patients.

Conclusion:

The present study has identified the level of Illness cognition and Perceived stress among patients undergoing hemodialysis and the study concluded that illness cognition could play a crucial role in managing or mitigating perceived stress in dialysis patients.

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