

Assess The Level Of Pain Among Hemodialysis Patients At Selected Hospitals

Mr. Mahantesh Mirji¹, Dr. Ravindra HN²

¹ Ph.D Scholar, Parul University, Vadodara, Gujarat

² Ph.D Guide, Parul University, Vadodara, Gujarat

Corresponding Author: Mr. Mahantesh Mirji, Ph.D Scholar, Parul University, Vadodara, Gujarat

Email-mirjimahantesh1988@gmail.com

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Abstract:

Background

Few studies have evaluated the functional interference of pain in activities of daily living (ADLs), despite the fact that pain is a common complaint among hemodialysis patients with chronic renal disease. Therefore, the purpose of this study was to assess the frequency, location, severity, and functional interference of pain in ADLs among patients with chronic renal disease receiving hemodialysis. Additionally, the study aimed to estimate the correlation between severe functional interference by pain in ADLs and particular pain locations.

Methods:

The research design employed with a purposive sampling strategy, descriptive research design was used. This study included 60 hemodialysis patients. The pain scale is used to evaluate the pain level of hemodialysis patients. The questionnaires were manually cleaned, their completeness verified, and then imported into data analysis software. After that, the collected data imported into SPSS software version of 25.0 for additional examination. The use of descriptive statistics was used. Lastly, the relationship between the independent and dependent variables was examined.

Result

Result revealed that of pretest level of pain among hemodialysis patients. Pretest level moderate pain 30(50%), 15(25%) were severe and mild pain, 0(0.0%) no pain. Demographic variable educational status of patients had statistically significant association with the pre-test levels of pain among hemodialysis patients. Age, religion, type of family, family monthly income and Number of hemodialysis per month had shown no statistically significant association with the pretest levels of pain among hemodialysis patients..

Conclusion:

For most HD patients, pain is a serious issue that is not adequately addressed. The care team should ask patients about their pain symptoms on a frequent basis and treat them well in order to improve their quality of life.

Keywords: Pain, hemodialysis, Patients, Hospital

INTRODUCTION:

With a global prevalence of 9.1% (697.5 million cases), chronic kidney disease (CKD) is the 12th biggest cause of mortality globally and is a public health concern. The number of dialysis patients in Brazil rose from 42,695 in 2000 to 91,314 in 2011 and 133,464 in 2021. Furthermore, Brazil ranks third globally in terms of the number of patients who need long-term dialysis[1]. In order to preserve homeostasis and improve patient survival, patients with chronic kidney disease (CKD) who have alterations in glomerular filtration rates for longer than three months—whether or not they are linked to parenchymal changes—need to be treated with renal replacement therapy by hemodialysis (HD) or peritoneal dialysis. However, in several countries, HD is an experience that influences the quality of life and can be painful [2].

Hemodialysis (HD) patients frequently complain of pain, yet the majority of them are not evaluated for this issue and receive insufficient care. A number of metrics, including elevated despair and a disturbed quality of life (QOL), have been linked to pain in these patients. In the past, there was no evaluation of the relationship between pain and residual renal function (RRF). Osteoarthritis, calcific uremic arteriolopathy, peripheral neuropathy, and renal bone disease (osteitis fibrosa cystica, amyloidosis, and osteomalacia) can all cause discomfort in patients with end-stage renal illness. Furthermore, other forms of pain are caused by co-morbid conditions such as ischemic peripheral artery disease, diabetic neuropathy, and osteopenia/osteoporosis (caused by chronic hypertension, diabetes, or aging). Furthermore, primary kidney disease as well as hemodialysis or peritoneal dialyses are important causes of pain [3]. Pain in patients with CKD varies in location and intensity. Pain in these patients could manifest as myalgia, cramps, headache, musculoskeletal pain, neuropathic pain, and/or chest pain. In addition, bone pain and progressive loss of muscle mass can also affect the quality of life of these patients [4].

Few studies in the literature have examined the existence of pain, particularly how it affects activities of daily living (ADLs), despite the fact that pain is a common complaint of CKD patients receiving HD. In order to determine the frequency, location, severity, and functional interference of pain in ADLs among CKD patients receiving HD, as well as the correlation between particular pain locations and significant functional interference of pain in ADLs, we conducted this study. These research can further our knowledge of pain in HD patients, allowing for the development of practical preventative and therapeutic strategies [5].

1. METHODS

1.1 Study area and period

The study was conducted in urology hospital, the entire specialty and every month more than 60 patients undergoing dialysis and study was conducted among hemodialysis patients.

Study design

The research design used in this study was descriptive research design.

1.2 Population

Accessible population:

The source population was all hemodialysis patients undergoing hemodialysis at hospital

Inclusion criteria and Exclusion criteria:

Inclusion criteria

- Hemodialysis patients after assessing their pain level
- Admitted at dialysis Unit
- Present during the period of data collection
- The patient who can read and write kannada

Exclusion criteria

- Hemodialysis patients who are not attended intervention regularly.

Sample size determination

The minimum sample size for this study will be 60. Sample comprised of 60 Hemodialysis patients who are admitted in a selected hemodialysis unit at hospital.

Sampling procedure

Non probability purposive sampling technique

Variables

Dependent variables

The independent variable in this study is pain level.

Socio demographic variables

Age, Religion, Monthly income, educational status, Type of family, Number of hemodialysis in month

Operational definition

- **Assess:** It refers to the assessing the hemodialysis patient pain level and it can be measured by pain scale.

➤ **Pain:** - In this study Pain is an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage. Pain is always a personal experience that is influenced to varying degrees by biological, psychological and social factors.

➤ **Hospital:** - It refers to care of hemodialysis patients, promotion of health, prevention of diseases.

➤ **Hemodialysis:** - It refers to the *procedure where a dialysis machine and a special filter called an artificial kidney, or a dialyzer, are used to clean your blood.*

1.3 Data collection instrument and procedure

Structured and semi-structured English version questionnaire was prepared from the literature review by principal -investigators. Translation to kannada version and again translated to English version were used by the principal investigators before starting the data collection time. It includes about socio-demographic factors and pain scale to assess the pain level among patients.

Data collection instrument and methods:-The data collector was the group members. Face to face interview held privately after verbal consent is obtained from each participant. After the pretest the samples pain level by mild pain, moderate pain and severe pain. Further visit to the participants were made by the researcher to assess the pain level. The data were edited for completion.

Data processing and analysis

The coded data were entered to computer by using Statistical Package for Social Science (SPSS) version 23 statistical software for analysis. Cleaning were performed by using frequency distribution .Any error were corrected after revision of the original data using the code numbers of the questionnaires. Frequencies were computed for description of the study population in relation to socio-demographic and other relevant variables. The association between independent and dependent variable determined by odd ratio with 95% CI and P- value less than considered as statistically significance. The direction and strength of statistical association was measured by odds ratio with 95% CI. Chi-square test will be used to find association of the pain score with selected demographic variables. In this study P-value < 0.05 was considered to declare a result as statistically significant association. The result presented by charts, figures, and tables.

Results:

Table 1: Frequency and percentage distribution of the demographic variables of patients

1.3. N=60

Demographic variables		Frequency	Percentage (%)
Age in years	35-40	6	10
	40-45	16	27
	45-50	17	28
	Above 50	21	35
Religion	Hindu	44	73
	Muslim	10	17
	Christian	6	10
Educational status	Primary	16	27
	Upper Primary	20	33
	High School	15	25
	PUC/Diploma	8	13
	Graduate	1	2
	Primary	16	27

Type of family	Nuclear	20	33
	Joint	32	54
	Extended	8	13
Family monthly income	Less than or equal to 4000	1	2
	4001-6000	13	21
	6001-10000	19	32
	10001 and above	27	45
Number of hemodialysis in month	1 Time	5	8
	2 Times	20	34
	>3 Times	35	58
Total		60	100

Table -1. Reveals frequency and Percentage distribution of hemodialysis patients according their socio- demographic data. Result shows that majority of patients 21(35%) were above 50 Years ,17(28%) of patients were found between the age group 45-50 years,16(27%) were age group of 40-45 years and 6(10%) were age group of patients 35-40 years. With references to religion majority of the patients 44(73%) were hindu,10(17%) were Muslim and 6(10%) were Christian.

Regards majority of patients education status 20(33%) were upper primary education,16(27%) were primary education, 15(25%) were high school education and 8(13%) were PUC/diploma and 1(2%) were graduation.

Regarding type of family 32(54%) were joint family,20(33%) were nuclear and 8(13%) were extended family.

Regards family monthly income majority of patients 27(45%) were 10,001 and above,19(32%) were family income 6001-10,001, 13(21%) were 4001 to 6000 and 1(2%) were family income less than or equal to 4000. Regarding Number of hemodialysis in months 35(58%) were more than 3 times, 20(34%) were 2 times and 5(8%) were 1 time

2. SECTION-II

Section II : Description of pretest level of pain among hemodialysis patients

N=60

Levels of knowledge	Pretest levels	
	Number	Percentage
No pain	0	0.0
Mild pain	15	25
Moderate pain	30	50
Severe pain	15	25
Total	60	100.00

P<0.05

The table 2 shows that description of pretest level of pain among hemodialysis patients. Pretest level moderate pain 30(50%) ,15(25%) were severe and mild pain, 0(0.0%) no pain.



Fig 1: Bar Graph depicting distribution of study subject according to pretest pain level.

Bar diagram shows that description of pretest level of pain among hemodialysis patients. Pretest level moderate pain 30(50%), 15(25%) were severe and mild pain, 0(0.0%) no pain.

Section: III: Association between pretest levels of pain among hemodialysis patients with their selected demographic variables.

N=60

variables		Pain level			Total	Chi square df	P value
		Mild	Moderate	Severe			
Age (InYear)	35-40	1	1	2	4	1.352 6	0.289 NS
	40-45	5	9	6	20		
	45-50	6	8	4	18		
	Above 50	3	12	3	18		
Religion	Hindu	10	10	6	26	0.755 4	0.951 NS
	Muslim	1	10	4	15		
	Christian	4	10	5	19		
Type of family	Nuclear	6	15	6	27	1.083 4	0.720 NS
	Joint	6	10	4	20		
	Extended	3	5	5	13		
Educational status	Primary	3	10	4	17	0.721 1	0.045*S
	Upper Primary	5	4	3	12		
	High School	4	10	5	19		
	PUC/Diploma	2	6	3	11		
	Graduate	1	0	0	1		
Family	Less than or equal to	1	1	2	4	1.782	0.939

monthly income	4000					3	NS
	4001-6000	6	10	3	19		
	6001-10000	6	12	4	22		
	10001 and above	2	7	6	15		
Number of hemodialysis per month	1	3	6	2	11	1.432 2	0.741 NS
	2	7	15	7	29		
	>3	5	9	6	20		

* P<0.05.*indicates significant S-Significant NS-non significant

The table 3 showed that demographic variable educational status of patients had statistically significant association with the pre-test levels of pain among hemodialysis patients. Age, religion, type of family, family monthly income and Number of hemodialysis per month had shown no statistically significant association with the pretest levels of pain among hemodialysis patients..P<0.05.

Discussion

The purpose of this study was to assess the level of pain among hemodialysis patients. In this study it was found that more than half of the patients having moderate and severe pain.

A similar study was carried out to assess pain levels of hemodialysis (HD) patients and to report pain management techniques. A quantitative descriptive study design with a summative approach to qualitative analysis was held, with a personal interview of the HD patients in a Southern European city hospital (n=70), using the Visual Analog Scales (VAS), the Wong-Baker Pain Scales (WBPS) and McGill Pain Questionnaire. People confused or in a coma, with hearing or reading problems and inability to communicate in the spoken language were excluded. Result showed that Renal patients under investigation were 69.72 ± 12.45 years old, male (58.5%) and on HD for 35.5 ± 27.4 months. In the Wong Baker Scale, pain was rated as “hurts little more” 30.8%, (n=20) and in the VAS 30.8% (n=20) reported 6/10 the amount of pain experienced. Forty-six percent pinpointed internal pain in the legs. Pain experienced was characterized as sickening (70.8%), tiring (67.7%), burning (66.2%), rhythmic (86.2%), periodic (66.2%) and continuous (61.5%). The patients studied mainly manage pain either with warm towel/cloth (85.2% females and all male patients), with massage (84.2% and 88.9%, respectively) or painkillers (47.4% and 52.6%, respectively). In a correlation of gender and pain management techniques, statistical significance was found only with warm towel (p=0.038). Study concluded that As renal patients are an increasing group of healthcare service users, and pain is affecting their everyday life, it is essential to individualize pain evaluation and to provide further education to clinical nurses so that they can effectively manage pain [6].

Conducted study to assess the patients describes the prevalence, cause, severity, and management of pain in this population. A chart review for demographic and clinical data was conducted, and patients completed a questionnaire that incorporated the Brief Pain Inventory, followed by the McGill Pain Questionnaire. **Result showed that** One hundred three patients (50%) reported a problem with pain. Patients with pain had been on HD therapy longer (52.2 months) than those without pain (37.7 months). Causes of pain were diverse, and 18.4% of patients had more than a single cause of their pain. Musculoskeletal pain was most common (50.5%) and equal in severity to pain associated with peripheral neuropathy and peripheral vascular disease. Fifty-five percent of patients with pain rated their worst episode in the previous 24 hours as severe. Thirty-two percent of patients with pain were administered no analgesics, 29.1% were administered nonopioid analgesics, 26.2% were administered weak opioids, and 9.7% were administered strong opioids. The Pain Management Index describes the effectiveness of pain management and was negative in 74.8% of patients, indicating ineffective management. **Study concluded that** Pain is a significant problem in more than 50% of HD patients and is not being effectively managed. The development of effective pain management strategies, underpinned by appropriate training and education, is necessary to improve the quality of life for dialysis patients. [7].

Conclusion:

According to the study's findings, most of the patients having moderate and severe pain by chronic renal disease patients undergoing hemodialysis. This study found that patient required non pharmacological methods to

reduce pain level.

Competing interest:

The authors report no conflicts of interest for this work.

Authors' contributions

All authors were involved in the interpretation of the data and contributed to manuscript preparation. All authors have read and approved the final version of the manuscript

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REFERENCES:

1. Sever M.Ş., Jager K.J., et al. *A roadmap for optimizing chronic kidney disease patient care and patient-oriented research in the Eastern European nephrology community.* Clin. Kidney J. 2021;14:23–35.
2. Carney E.F. *The impact of chronic kidney disease on global health.* Nat. Rev. Nephrol. 2020;16:251. doi: 10.1038/s41581-020-0268-7.
3. Sessa Rde C., Lopes A. *Chronic dialysis in Brazil: Report of the Brazilian dialysis census, 2011.* J. Bras. Nefrol. 2012;34:272–277.
4. Neves P.D.M.M., Sessa R.C.. *Brazilian Dialysis Census: Analysis of data from the 2009–2018 decade.* Braz. J. Nephrol. 2020;42:191–200. doi: 10.1590/2175-8239-jbn-2019-0234.
5. Mangan C. Dhanda R. *Renal physiology: Blood flow, glomerular filtration and plasma clearance.* Anaesth. Intensiv. Care Med. 2018;19:254–257.
6. Tsuboi N., Sasaki T. *Assessment of nephron number and single-nephron glomerular filtration rate in a clinical setting.* Hypertens. Res. 2021;44:605–617.
7. Fidan F., Alkan B.M., Tosun A. *Quality of life and correlation with musculoskeletal problems, hand disability and depression in patients with hemodialysis.* Int. J. Rheum. Dis. 2016;19:159–166.