International Journal of Innovation Scientific Research and Review
Vol. 06, Issue, 11, pp.7403-7405, November 2024
Available online at http://www.journalijisr.com
SJIF Impact Factor 2023: 6.599

IJISRR

ISSN: 2582-6131

Research Article

A STUDY TO ASSESS THE EFFECTIVENESS OF CRYOTHERAPY ON PAIN PERCEPTION AMONG HEMODIALYSIS PATIENTS IN SELECTED HOSPITALS ,CHITRADURGA

[1,] * Mr.Chethan M, [2]Usha S, [3]Ambha .V, [4]MS.Lakshmi .M

[1]Lecturer, Department of medical Surgical Nursing, Shri Ramana Maharshi College of Nursing, Tumkur, India.
[2]PhD Scholar, Principal Shri Ramana Maharshi College of Nursing, Tumkur, India.
[3]Prof. Ambha .V. Principal ,Shri Durgambha School of Nursing, Tumkur India.
[4]Lecturer, Department of Obstetrics and Gynaecology Nursing, Shridevi institute of Nursing, Tumkur.

Received 19th September 2024; Accepted 20th October 2024; Published online 30th November 2024

ABSTRACT

Objectives: 1. To assess the pre test and post test level of pain perception among hemodialysis patients. 2. To determin the effectiveness of Cryotherapy on level of pain perception among hemodialysis patients. **Methodology:** A pre experimental one group pre test and post test design and a quatitative research approach was carried out on 30 hemodialysis patients selected by convenient sampling technique to test the effectiveness of structured awareness programme. the data was collected by using structured questionnaire consists 10 items **Results:** the resent study evaluates and found that demographic variables majesty 50 of them were in the age group of 61 years and above ,majority 37% of them were secondary and above in the education, majority 40 of them house wife, majority 66.7 of Hindu religion, majority 47% of family income, majority 63 of mixed diet. **Conclusion:** the data were analysed by applying descriptive and inferential statistics, the result of the study indicate that focus of this study was to explore the level of pain perception of hemodialysis patients ,analysis data shows highly significance difference found between pre-test and post- test knowledge score at the level of 0.05 the hypothesis is proved and accepted.

Keywords: pain perception, Hemodialysis patients, Cryotherapy.

INTRODUCTION

End Stage Renal Disease (ESRD) is a one of the major issues in the world wide , which leads to public health problem globally. The irreversible advanced Chronic Kidney Disease (CKD) leads to End Stage Renal Disease where there is permanent loss of kidney function causing extreme mortality rates among this population. The increase of ESRD patients necessitates management on dialysis for better outcomes [1] End-stage renal disease, now termed chronic kidney disease (CKD) stage five is a state of permanent loss of renal function when measured or calculated glomerular filtration rate is less than 15 ml/min permanently. Worldwide, the number of ESRD patients is growing rapidly in developed and developing countries, fueled by aging populations and a pandemic of chronic noncommunicable diseases especially diabetes mellitus and hypertension. Current projections indicate that, by 2030, the global population of ESRD patients living on dialysis may exceed 2 million[2]

Hemodialysis is the most common treatment for the end-stage chronic renal failure in the world. A 2018 estimate put the number of patients on chronic dialysis in India at about 175,000, giving a prevalence of 129 per million population. The number of people receiving renal replacement therapy is projected to be 5·4 million by 2030 [3] In hemodialysis (HD) patients, the prevalence of chronic pain can be up to 92%. A survey of HD patients found 55% reported a severe pain episode in the previous 24 hours. Furthermore, ~75% of HD patients report inadequate pain management. Despite these shocking statistics there is no universally accepted guideline for the treatment of pain in HD patients. Nevertheless, poorly managed pain in HD patients promulgates psychological disturbances, impaired sleep, decreased dialysis compliance, and an overall decline in quality of life [5]

***Corresponding Author: Mr.Chethan M,**
1Lecturer, Department of medical Surgical Nursing, Shri Ramana Maharshi College of Nursing, Tumkur, India.

Hemodialysis (HD) is the most frequently used renal replacement treatment with the arteriovenous fistula (AVF) being the gold standard for vascular access in HD patients.[5] Patients with end stage renal disease undergoing hemodialysis are repeatedly exposed to stress and pain from approximately 300 punctures per year to their AVF. Considerable patient discomfort and stress can be associated with the insertion of large gauge needles into an AVF. Alleviation of this pain might improve their acceptance of the procedure and thus, their quality of life [6]

Pain is an unpleasant feeling and emotional experience that is related to real or potential tissue damage or a damage that is defined similarly[7] . From many points of view, the pain is a common symptom intended for seeking aid[8]. International Association for the Study of Pain (IASP) defines the pain as “an unpleasant emotional situation which is originating from a certain area, which is dependant or non-dependant on tissue damage and which is related to the past experience of the person in question”[6]

Cryotherapy, or the use of cooling, is a non-pharmacological pain relief technique that has been used for centuries. Cryotherapy lowers the temperature over the painful/inflamed area of the skin to reduce the velocity of nerve conduction in C- and A-delta fibers, thereby slowing the transmission of pain signals. Despite being simple, non-invasive, and safe, the effectiveness of this technique, especially as an independent nursing function, lacks strong evidence. According to research studies Cryotherapy can effectively reduce the venipuncture pain among children with AVF undergoing maintenance HD[7]

Patients undergoing hemodialysis are frequently exposed to pain from approximately 302 punctures per year to their arteriovenous fistula (AVF) site. Relieving their pain sensation improves their acceptance of the procedure and consequently improves their quality of life. cryotherapy was effective on decreasing pain intensity

amongpatients undergoing hemodialysis at puncture sites of arteriovenous fistula [8]

Need for the study

The burden of chronic kidney disease (CKD) in India cannot be assessed accurately. The approximate prevalence of CKD is 800 per million population (pmp), and the incidence of end stage renal disease (ESRD) is 150–200 pmp. The most common cause of CKD in population-based studies is diabetic nephropathy. India currently has 820+ nephrologists, 710+ hemodialysis units with 2,500+ dialysis stations and 4,800+ patients on CAPD. There are 172+ transplant centers, two-thirds of which are in South India and mostly privately run. Nearly 3,500 transplants are done annually, the total number of cadaver donors being approximately 700 till now [9] It is well-known that chronic pain is commonly experienced by patients with end-stage renal disease who receive dialysis.

Hemodialysis (HD) is the most commonly used type of renal replacement therapy, with over 90.0% of patients receiving it. It is also highly effective, halting most of the clinical complications and extending life expectancy [11]. However, patients on HD still suffer from high mortality and morbidity rates due to its complications, including decreased blood pressure, increased blood pressure, nausea, vomiting, vascular access compromise, infections, and chronic pain. A multicenter cross-sectional study was conducted to assess the prevalence of pain among ESKD patients on Hemodialysis (HD), as well as to explore the factors that were associated with this complaint in the West Bank, Palestine, between August and November 2018. study used questionnaire-based direct interviews with subjects.

the most frequently used pharmacotherapy for pain alleviation. Multiple regression analysis showed that BMI ($p = 0.018$), gender ($p = 0.023$), and the number of comorbidities ($p < 0.001$) were independently associated with pain severity score [14]A study was conducted to assess the effectiveness of Cryotherapy on Pain Intensity at Puncture Sites of Arteriovenous Fistula on Patients with Hemodialysis in Dialysis Unit of a Tertiary Care Hospital, Ludhiana, Punjab. Total 20 patients selected by purposive sampling technique were studied on 3 successive hemodialysis sessions in dialysis unit of a tertiary care hospital, Ludhiana. On initial observation, baseline pre- and post-puncture of arteriovenous fistula vital signs parameters and post- puncture numerical pain rating scale were measured. On second observation, cryotherapy was given to the patients on the web between thumb and index finger of contralateral arm with measurement of pre- and post-intervention vital signs parameters and postpuncture of arteriovenous fistula numerical pain rating scale. On third observation, cryotherapy was given around arteriovenous fistula site with measurement of pre- and post-intervention vital signs parameters and post-puncture of arteriovenous fistula numerical pain rating scale. The findings revealed that in baseline observation, Mean score was 7.4which decreased to 5.3 in second observation and further decreased to 4.4 in third observation and Standard Deviation was 0.69 in baseline observation which increased to 0.75 in second observation and further increased to 0.86 in third observation with t value of 0.0009 [15] From the above literatures it is found that the patients with hemodialysis experience severe pain at Puncture Sites of Arteriovenous Fistula.

THE STUDY OBJECTIVES

1. To assess the pre test and post test level of pain perception among hemodialysis patients.
2. To determine the effectiveness of Cryotherapy on level of pain perception among hemodialysis patients.

HYPOTHESIS

H1: There will be a significant difference between pre test and post test level of pain perception among hemodialysis patients**.**

H2: There will be significant association between the post test level of pain

perception among hemodialysis patients with their selected demographic variables**.**

METHODOLOGY

The research design of the study was pre experimental one group pre-test post-test design. The population was research approach will be used. the sample consists of 30 hemodilysis patients in Government District Hospital, Chitradurga. convenient sampling technique was used for the present study .the pre-test was conducted using structured questionnaire and pre test on same day. The post-test was conducted after7 days of intervention by using same questionnaire. the data obtained was analysed by using descriptive and inferential statistics.

RESULTS

Pain Level Of Hemodialysis Patients

Pretest and post test pain level of the Hemodialysis patients.

N=30

Knowledge level	Pre test		Post test	
	Frequency	%	Frequency	%
a. No pain	0	0	0	0
b. Mild pain	4	13.3	23	76.7
c. Moderate pain	9	30.0	6	20.0
d. severe pain	17	56.7	1	3.3
Total	**30**	**100.0**	**30**	**100**

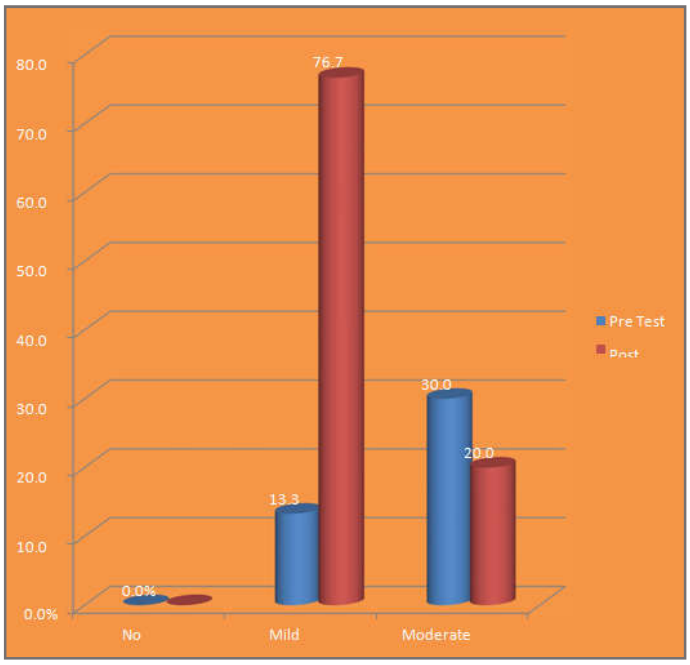

Fig 13: Pre test and post test pain level of Hemodialysis patients

DISCUSSION

The present study was conducted evaluate the effectiveness of cryotherapy on pain perception among hemodialysis patients in selected hospital chitradurga. In order to achieve the objectives, Evaluative approach and pre experimental design was adopted and Convenient sampling technique was used to select the samples. The pilot study was conducted to find the feasibility of the study 03-05-2023 to 10-05-2023

Among 6 hemodialysis patients at government hospitals ,chitradurga. The main study was conducted from 26-05-2023 26-06-2023 among 30 subjects :the subject was selected by purposive sampling and data was analyzed and interpreted using descriptive and inferential statistics .

RECOMMEDATION

Recommended to conduct true experimental study Comparative study can be under taken to find out the difference in knowledge among hemodialysis patients in selected hospitals. A similar study can be one on large scale.

ACKNOWLEDGMENT

First of all my sincere gratitude to god for his constant mercy and guidance in completing of my study. My sincere and heartfelt thanks to my dear beloved mother Sakamma c, father Mylarappa y, elder sister Aishwarya, M and younger sister Lakshmi M and whole my family members for their support ,inspiration ,encouragement concern during the study period .

I extended my thanks to Pro.Usha S PhD Scholar. RGUHS, Dr. Bheemraju, Shridevi college of Nursing. Prof Amba . Principal ,Shri Durgambha School of Nursing , for proper guidance ,valuable suggestions.

REFERENCES

1. Yuen SK, Suen HP, Kwok OL, Yong SP, Tse MW. Advance care planning for 600 Chinese patients with end-stage renal disease. Hong Kong Journal of Nephrology. 2016; 19:19–27. Available from: https://doi.org/10.1016/j.hkjn.2016.04.001
2. Szczech LA, Lazar IL. Projecting the United States ESRD population: issues regarding treatment of patients with ESRD. Kidney International, Supplement 2004; 66(90):S3–S7. Available from: https://www.sciencedirect.com/science/article/pii/S0085253815503682
3. Jha V, Ur-Rashid H, Agarwal SK, Akhtar SF, Kafle RK, Sheriff R; ISN South Asia Regional Board: The state of nephrology in South Asia. Kidney Int. 2019; 95: 31–37. Available from: https://www.kidneyinternational-online.org/article/S0085-2538(18)30604-5/fulltext
4. Gerasimoula K, Lefkothea L, Maria L, Victoria A, Paraskevi T, Maria P. Quality of life in hemodialysis patients. Mater Sociomed. 2015; 27(5):305–309. Available from: https://doi.org/10.5455/msn.2015.27.305-309
5. Brkovic T, Burilovic E, Puljak L. Prevalence and severity of pain in adult end-stage renal disease patients on chronic intermittent hemodialysis: a systematic review. Patient Prefer Adherence. 2016; 10:1131–1150. Available from: https://pubmed.ncbi.nlm.nih.gov/27382261/
6. Merskey H, Bogduk N. Pain. In: Classification of chronic pain: description of chronic pain syndromes and definition of pain terms. Pain Suppl 2016;3:1–226. Available from: https://ijanm.com/HTMLPaper.aspx?Journal=International%20Journal%20of%20Advances%20in%20Nursing%20Management;PID=2015-3-3-14
7. Hughes J. Pain management: from basics to clinical practice. Lippincott, Williams and Wilkins: New York; 2008. 20, 80-2, 170. Available from:https://books.google.co.in/books?hl=en&lr=&id=FxNBhaknqAC&oi=fnd&pg=PP1&ots=4N6hjZnphh&sig=ubs6c4EuajXSlWQxxvwSfpzzrQY&redir_esc=y#v=onepage&q&f=false
8. Patidar V. Effectiveness of Cryotherapy on Pain during Arteriovenous Fistula Puncture among Hemodialysis Patients. J Lab and Life Scs. 2015; 1(1): e25-e30.
9. Agarwal SK, Dash SC, Irshad M, et al., Prevalence of chronic renal failure in adults in Delhi, India. Nephrol Dial Transplant 2005;20:1638–1642. Available from: https://pubmed.ncbi.nlm.nih.gov/15855202/
10. Davison SN, Koncicki H, Brennan F. Pain in chronic kidney disease: a scoping review. Semin Dial. 2014 Mar;27(2):188-204. Available from: https://pubmed.ncbi.nlm.nih.gov/24517512/

****