Original Research Paper

Medical Surgical Nursing

EFFECT OF COMPREHENSIVE NURSING STRATEGIES ON THIRST DISTRESS AND INTERDIALYTIC WEIGHT GAIN (IDWG) AMONG PATIENTS UNDERGOING HEMODIALYSIS IN A SELECTED HOSPITAL AT ERNAKULAM DISTRICT, KERALA

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ABSTRACT Chronic Kidney Disease (CKD) has become a major health problem; it involves progressive, irreversible destruction of the nephrons in both kidneys. Thirst is the most common complaint of patients undergoing hemodialysis which stimulate the patient to drink more fluids resulting in interdialytic weight gain (IDWG).The study aim to evaluate the effect of comprehensive nursing strategies on thirst distress and IDWG among patients undergoing hemodialysis. A quantitative research approach with one group pretest posttest design was adopted for this study. The sample consists of 35 patients undergoing hemodialysis, selected conveniently. Data were collected using the tools such as socio personal clinical data, modified thirst distress scale, visual analogue scale and interpretation of IDWG. The collected data were analyzed using descriptive and inferential statistics. The study findings revealed that the't' value for thirst distress and IDWG were 6.19 and 7.57 respectively which were significant at p< 0.001. The thirst distress and IDWG had a moderate positive correlation (r = 0.503). The study also revealed that there was no significant association between thirst distress and IDWG with selected demographic variables. Based on the present study findings, the comprehensive nursing strategies were highly effective in reducing the thirst distress and IDWG of CKD patients undergoing hemodialysis.

KEYWORDS : Thirst Distress; IDWG; Comprehensive Nursing Strategies.

INTRODUCTION

Chronic kidney disease (CKD) has emerged as one of the most prominent causes of death and suffering in the 21st century. CKD has become a major health problem because it involves the progressive, irreversible destruction of the nephrons in both kidneys. The global burden of CKD is increasing, and it is expected to become the fifth leading cause of years of life lost by 2040. If CKD remains uncontrolled and the affected person survives the ravages of systemic complications of the disease, it progresses to End Stage Renal Disease (ESRD). Up to 10% of adults worldwide have CKD, which is invariably irreversible. In 2017, an estimated 843.6 million people were affected by the disease worldwide.

In India, there is a rising incidence of chronic kidney disease, which is likely to pose major problems for both healthcare and the economy in future years. Indeed, it has been estimated that the age-adjusted incidence rate of ESRD in India is 229/million people annually. Renal failure is becoming a major health problem among adults in Kerala. A community based study results showed a high burden of renal disease among the rural population with a prevalence of 4.86%. There was no gender-wise difference in the prevalence rates. On the basis of an estimated ESRD incidence of 152/million people, the approximate number of new ESRD cases every year in Kerala is put at 5,600.

Hemodialysis is an effective therapeutic procedure for CKD patients. Thirst is the most common complaint of patients undergoing hemodialysis, which stimulate the patient to drink more fluids resulting in interdialytic weight gain (IDWG). It can be seen in 10–95% of HD patients. IDWG varies by individual, but it is typically 5% less than body weight, which ranges between 2 - 3.5kg.

Studies have reported a positive correlation between thirst and IDWG; in general, patients on hemodialysis with high levels of thirst will gain more weight between hemodialysis sessions. The IDWG results from the consumption of salt and liquids between two hemodialysis sessions. Non-adherence to the fluid-restricted diet may result in cardiovascular complications. The use of strategies that act on pre-absorptive satiety is a viable alternative for patients who experience thirst during periods of fluid restriction. Various studies conducted in other countries also revealed that nursing interventional strategies are effective in reducing thirst distress and IDWG among hemodialysis patients.

To the best of the researcher's knowledge, there is no published data regarding the effect of comprehensive nursing strategies on thirst distress and IDWG among patients undergoing hemodialysis in Kerala. If the study is not conducted, no one will know about the effect of interventions, here arises the importance of study.

METHODOLOGY

Research Approach: a quantitative approach was considered appropriate for this study.

Research Design: Quasi experimental one group pretest posttest design

Setting of the Study: The study was conducted at Koinonia Hospital, Allapra, Ernakulam.

Population: The population in the study comprised of all patients undergoing hemodialysis due to ESRD.

Sample Size: The sample size was 35. It was estimated based on the power analysis, statistician's opinion and review of previous research study.

Sampling Technique: Convenient sampling was used in the study

Data Collection Instrument:
Tool 1. Socio personal clinical data
Tool 2. Measure thirst intensity and level of thirst
        Part 1: Visual Analogue Scale (VAS)
        Part 2: Modified Thirst Distress Scale (TDS)
Tool 3.Interpretation of Interdialytic weight gain (IDWG)

Content Validity of the Tool: The content validity of tools was obtained from seven experts (five Nursing and two Medical) and necessary modifications were made to the tool based on their valuable suggestions and opinions.

Reliability of the Tool: The reliability of the modified thirst distress scale, VAS scale and IDWG was determined by the interrator method. The 'r' value was 0.85.

Data Collection Method: The study was conducted after obtaining approval from the institutional ethics committee and concerned authorities. Thirty-five samples, satisfying the

sampling criteria were conveniently selected from Koinonia Mission Hospital, Allapra. The researcher met the participants and explained the purpose of the study. They were assured that all the data would be kept confidential and would be used only for the study purpose. Informed consent was obtained from the participants. On day one, a pretest was conducted for the patient using the tools. Comprehensive nursing strategies regarding thirst reduction were instructed to the patients on the same day using an instructional card and demonstration, which lasted for 15–20 minutes. The researcher gives the patients a log record and instructs them to keep a record of the components of nursing strategies that they use according to their preferences whenever they are thirsty which include Sucking 5 mL of ice cubes, 100 mL plain cold water mouthwash, Divide the fluid allowance into four equal parts, Salt-reducing diet (2 grams per day), apply moist oral swab on lips. On day four, assess the patient's log record and reinforce the components of the nursing strategies. On day seven, the patient underwent a posttest using the same modified TDS, VAS, and calibrated weighing scale. Finally, the investigator expressed gratitude to the sample for their cooperation.

RESULTS

Section 1: Description of Sample Characteristics

The table 1 showed that majority of the sample 17 (48.5%) were in the age group of 51-60 years and among them 20 (57.2%) were males. Among the sample 21 (60%) had primary education and 19 (54.3%) were unemployed. Majority of the sample 19 (54.3%) and the entire sample 35 (100%) has history of diabetes mellitus and hypertension. Most of the sample 29 (82.8%), 31 (88.6%) and 33 (94.2%) had no increased cholesterol, cardiovascular diseases and other diseases respectively. All sample 35 (100%) had no habits of smoking and alcoholism. Majority of sample 16 (45.8%) were having Chronic Kidney Disease since 5 years and majority of sample 23 (65.7%) were undergoing hemodialysis < 1 year. Majority of sample 31 (88.5%) were had serum sodium between 135-145mEq/L and 30 (85.8%) were had serum potassium >5.0mEq/L. Regarding medications which induced thirst, majority of sample 19 (54.3%) and 30 (85.8%) were using insulin/OHA and calcium supplements. In the present study, the majority of sample 21 (60%), 22 (62.8%), 23 (65.7%) were not using sodium bicarbonate, Vitamin D and calcium supplements respectively. Also, the entire sample 35 (100%) were using antihypertensives.

Section 2: Thirst Distress and IDWG of Patients Undergoing Hemodialysis

Table 2 showed that the mean 30.28 and mean percentage 75.7% of post interventional thirst distress score is lower than the mean 32.37 and mean percentage 80.92% of pre interventional thirst distress score. The mean 3.1 and mean percentage 62% of post interventional IDWG score is lower than the mean 3.5 and mean percentage 70% of pre interventional IDWG score.

Table 1.Frequency and Percentage Distribution of the Sample Based on the Selected Socio Personal and Clinical Variables.   (n=35)

Socio personal varables	Frequency	Percentage
Age in years		
31-40	2	5.8
41-50	6	17.2
51-60	17	48.5
>60	10	28.5
Gender		
male	20	57.2
female	15	42.8
Education		
primary	21	60
secondary	9	25.8

diploma/graduate	5	14.2
Occupation		
Unemployed	19	54.3
Private service	0	0
Government service	0	0
Self-employed	2	5.7
Retired	13	37.1
Home maker	1	2.9
Comorbid condition		
diabetes mellitus	19	54.3
cardiovascular disease	4	11.4
hypertension	35	100
increased cholesterol	6	17.2
others	2	5.8
Habit of smoking		
yes	0	0
no	35	100
Alcoholism		
yes	0	0
no	35	100
Duration of undergoing hemodialysis		
<1 years	10	28.5
1-5 years	16	45.7
>5 years	9	25.8
Duration of CKD		
<1 years	23	65.7
1-5 years	11	31.4
>5 years	1	2.9
Serum sodium (mEq/L)		
<135	3	8.6
135-145	31	88.5
>145	1	2.9
Serum potassium (mEq/L)		
<3.5	0	0
3.6- 5.0	5	14.2
>5.0	30	85.8
Medications		
Antihypertensive	35	100
Insulin/ OHA	19	54.3
Sodium bicarbonate	14	40
calcium supplement	30	85.8
vitamin D	13	37.2
others	12	34.3

Table 2 Mean and Mean Percentage of Thirst Distress and IDWG of Patients Undergoing Hemodialysis. (n=35)

| Variable	Group	Mean	Mean %	SD	t(calculated value)	t(table value)
Thirst distress	Pre-test	32.37	80.92	2.54	6.19***	3.65
	Posttest	30.28	75.7	2.37		
IDWG	Pre-test	3.5	70	0.82	7.57***	3.65
	Posttest	3.1	62	0.7		

***significant level at 0.001

Section 3: Effect of Comprehensive Nursing Strategies on Thirst Distress and IDWG Among Patients Undergoing Hemodialysis.

Table 2 showed that the mean post interventional thirst

distress score (30.28) is significantly lower than the mean pre interventional thirst distress score (32.37). The calculated 't' value 6.19 is found to be higher than the table value 3.65 at 0.001 level of significance. The mean post interventional IDWG score (3.1) is significantly lower than the mean pre interventional thirst distress score (3.5). The calculated 't' value 7.57 is found to be higher than the table value 3.65 at 0.001 level of significance.

Section 4: Correlation Between Thirst Distress and IDWG Scores of Patients Undergoing Hemodialysis.
Scattered Diagram 1 Correlation Between Thirst Distress and IDWG Scores of Patients Undergoing Hemodialysis.
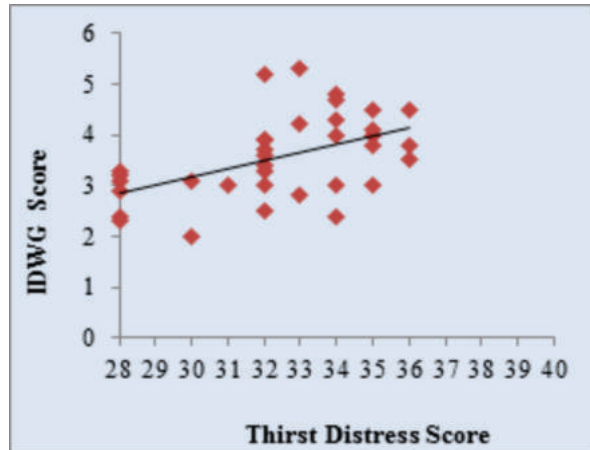
The calculated value of correlation coefficient (r= 0.503) was higher than the table value (0.449). As the p was <0.01, it was found to be statistically significant. This shows that there was a moderate positive correlation between the thirst distress and IDWG of patients undergoing hemodialysis.

Section 5: Association Between Pretest Thirst Distress and IDWG with Selected Socio Personal and Clinical Variables Among Patients Undergoing Hemodialysis.
There was no significant association between pretest thirst distress score, IDWG score with the socio personal and clinical variables. Data on association between the thirst distress, IDWG of patients and the selected socio-personal, clinical variables were analysed by using Mann Whitney U test, Kruskal wallis, sample t test and ANOVA.

Nursing Implications
• The nurses working in hemodialysis unit can use these safe, cost effective comprehensive nursing strategies for reducing thirst distress among hemodialysis patients.
• The nurse educators can motivate nursing students especially post graduate students to undertake research studies among hemodialysis patients.
• Nursing students should be skilled enough to identify thirst distress and to apply the strategies among patients on NPO status or with restricted intake in different settings.

Limitations
• The study was confines to a small number of sample and short duration which limited the generalization of findings.
• Thirst distress was measured according to the verbal response of the subjects.
• The study design was limited to quasi experimental one group pretest posttest design.

Recommendations
• The study can be replicated on a large sample including greater duration in multiple setting.
• An explorative study can be done on lived in experiences of hemodialysis patient with thirst distress.
• The present study interventions can be incorporated in the routine care of patients undergoing hemodialysis.

CONCLUSION
Based on the study findings, the comprehensive nursing strategies was highly effective in reducing the thirst distress and IDWG of CKD patients undergoing hemodialysis. The present study findings can be used for the future studies to be conducted in different settings and lead to life with better quality of life.

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