

A Pre-Experimental Study to Evaluate The Effectiveness of Structure Teaching Program on Home Care Management of Patient Undergoing Hemodialysis among their Care Giver in NMCH Jamuhar

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Abstract: Patient at the last stage of kidney disease depends on dialysis to mechanically remove fluid, waste products, and electrolytes from the blood. End-stage renal disease is a chronic illness which reduces the lifespan of patients. Haemodialysis takes place at least 3 times in a week, each session continuing between 3 and 6 hrs. depending on the size of the patient and their compliance with dietary restrictions. A few patients of residual renal failure function can be managed successfully with twice weekly dialysis, but this is not a satisfactory for majority of patients. A quasi-experimental study was with one pre- test and one post -test design was adopted for the present study. The self structured knowledge questionnaire on patient undergoing hemodialysis of care givers was developed to collect the data. The Hemodialysis group was selected by Purposive sampling technique. The main study conducted was on 12/02/2023 and 06/2/2023, at Narayan Medical College Hospital, Rohtas. Bihar. Sasaram and data collected, analyzed, and interpreted based on descriptive and inferential statistics. Majority of the sample at 60% were in the category of 25- 35 years. Majority of the sample at 90% were Male. Majority of the sample at 53.33% were in the graduate qualified. Majority of the sample at 50% were in the Private job. Majority of the sample at 67% were married. Majority of the sample at 36.66% were in the 20,000-30,000. Majority of the sample at 43.33% were in the category of 1 year. Majority of the sample at 80% were Hospital. After meticulous data collection and interpretation, it was found that most of the population at 15 falls under Neither Aware nor Unaware category making them average, 8 were in unaware category and the rest of 7 were in aware category; Most of the population at 18 falls under very aware category making them above average, and 12 were in aware category; student t test revealed extremely statistically significant between pre- test and post test score. Hence, it is required to have STP program in future regarding hemodialysis to improve nursing care to the patient.

Keywords: Effectiveness, Caregivers, Care, STP, Knowledge, Hemodialysis

I. INTRODUCTION

Patient at the last stage of kidney disease depends on dialysis to mechanically remove fluid, waste products, and electrolytes from the blood. End-stage renal disease is a chronic illness which reduces the lifespan of patients. In worldwide, 30 million peoples were suffering from kidney diseases. In India, around 8% of the population have renal problem. In that, >5% were undergoing hemodialysis. Hemodialysis takes place at least 3 times in a week, each session continuing between 3 and 6 Hrs. depending on the size of the patient and their compliance with dietary restrictions. In renal failure, the patient's capability of excretion of fluid load is absent or reduced. Fluid balance is maintained by removal of fluid on dialysis along with restriction of sodium and water. Disobedience with any can lead to volume overload, which presents in the same way as heart failure, with peripheral and pulmonary enema. Fluid overload can cause hypertension in renal patients.

A study was conducted on a cross-sectional research design on assessing burden and it's determined in care giver of CKD patient undergoing of H.D. The total sample Size was 51 selected by the using convenience probability sampling technique. The result of study revealed that the majority of care givers burden is 68.6% had mild to severe level of burden the study conducted the scientific cut association to conclude in the burden of care givers.

A study was Conducted on Effectiveness of selected nursing interventions on fatigue and quality of life among Chronic Renal Failure Patients undergoing Hemodialysis in a selected hospital at Madurai. Background: Non communicable diseases are increasing day by day. Health is wealth is an old saying, which is realised by people who has CKD today. As their wealth is reduced by treating the disease throughout their life time, the restrictions in food and fluid impose lot of stress, affects their Quality of life. Nearly 10% of the populations were affected by CKD and millions of them die each year because they could not afford the treatment. Hemodialysis has been proved to be the effective treatment modality. The therapeutic nursing interventions were effective in improving quality of life and reducing fatigue level. Pre-test with 15th day post-test fatigue scores comparison [$t=23.05$, $P(< 0.001)$], Comparison of pre-test with 30th day post-test fatigue scores [$t=41.19$, $P(< 0.001)$], Comparison between 15th and 30th day post-test fatigue scores [$t=25.58$, $P(< 0.001)$], Comparison of pre-test with 15th day post-test level of quality of life score [$t=16.32$, $P(< 0.001)$], Comparison of pre-test with 30th day post-test level of quality of life score [$t=23.76$; $P(< 0.001)$], Comparison between 15th and 30th day post-test quality of life score [$t=-15.19$, $P(< 0.001)$].

A study was Conducted on a experimental research study to determine the effects of a family-based training program on the care burden of family caregivers of patients undergoing hemodialysis. Materials and Methods The present controlled, randomized, clinical trial was conducted on 70 caregivers of patients undergoing hemodialysis in Ali Asghar and Zahray-e Marzieh hospitals in Isfahan, Iran, in 2017. After conducting convenient sampling, 70 participants were randomly assigned into 2 groups (35 in each group).

Conducted descriptive cross-sectional study among 123 caregivers giving care to hemodialysis patients for at least 3 months at Teaching Hospitals, Chitwan was carried out using simple random sampling technique. Level of burden was evaluated using the burden questionnaire (Zarit Burden Interview). The study revealed that 60 (48.78%) had mild to moderate, 53 (43.08%) had moderate to severe. The median scores for burden among the caregivers was (39.30 ± 11.68) with 44.65%.

A study wasConducted on a descriptive study to assess the care burden of caregivers of hemodialysis patients. The objectives were to assess the care burden of caregivers of hemodialysis patients, to determine the association between care burdens of caregivers of hemodialysis patients with the selected socio-demographic variables. A qualitative research approach and non-experimental descriptive design was adopted for the study. Data was collected by using Zarit Burden Interview (ZBI).

A study wasconducted on a Pre experimental one group pre-test post-test design was adopted for the study. Purposive sampling was used. Sample size was30.The investigator used self-instructional module for assessing knowledge regarding home care management among patients. After conducting the pre-test self-instructional module was introduced to the patients. Post test was conducted using the same research tool. The collected data were analyzed by using descriptive and inferential statistics. The result of pre-test shows that 10% of hemodialysis patients had poor knowledge and 60% had average knowledge and 30% had good knowledge.

A study wasConducted on the effectiveness of structured teaching program was assessed based on the knowledge of staff nurses working in the hemodialysis unit regarding the prevention of infection. To compare the knowledge between control and experimental group used pre-test and post-test with the help of demographic variables and their association. Research approach used for the study was experimental approach & quasi experimental research design.

A study wasconducted on a inscriptive, cross-sectional study, conducted in 2017, questionnaires were administered during structured interviews with 75 participants in five MHD-units in Bloemfontein to assess socio-demographics and KAP regarding the 'renal' diet The median age was 50.5 years; 70.7% of participants were male. Overall, 49.4% scored low ($< 50\%$) on knowledge regarding restricted foods, food content of restricted minerals, and phosphate binders; 60.0% reported negative attitudes towards the diet, and 61.4% reported poor adherence practices.

II. METHODOLOGY

This chapter deals in whit the methodology selected for the study which includes research approach, research design, variable, research setting, population, target population, sample, sample size, sampling technique, sample of criteria, selection of development of tool description of tool, validity and reliability of tool, pilot study, data collection procedure and plan for the data analysis. Research approach involves the description of plan to investigate the phenomenon under the study in a structured or unstructured or a combination of the two methods. The approaches help

to decide the presence of absence of variables. The approach of study depends on several factors, but primarily on the nature of phenomenon under the study (Suresh k Sharma).

REAEARCH APPROACH

Pre experimental approach & quasi experimental research design.

RESEARACH DESIGN

The research design is the overall plan for obtaining answer to the research question. It is indicating how to often data will be collected, what type of comparison will be made and where the study will tack place. The research design is the architectural backbone of the study (polit and beck 2013)

RESEARCH SETTING

This study was conducted in narayan medical college hospital, jamuhar,rohtas. It is multi speciality hospital with bed strength of 1200. This hospital is accessible to all located in the sasaram of the city

POPULATION

TARGET POPULATION

In this study, target population is caregivers undergoing hemodialysis NMCH d

SAMPLE

The sample for this study care taker of chronic kidney disease patient undergoing hemodialysis care. sample consisted of 30 caregivers attending NMCH.

SAMPLE SIZE

In this study total sample size 30 caregivers. Then take two times sample 15 morning shift and 15 afternoon shifts.

SAMPLING TECHNIQUE

Purposive sampling technique was used for this study.

SAMPLE OF CRITERIA

In sampling criteria, the researcher specific the characteristics of the population under the study by detailing the inclusion and exclusion criteria. Inclusion criteria are characteristics that each sample element must possess to be included in the sample. Exclusion criteria are characteristics that could confound result of the study therefore such participant is excluded from the study.

Inclusion Criteria:

1. Being patient first and second degree relative.
2. Caregivers who having the responsibility for care of the undergoing hemodialysis patient.
3. Caregivers who write and read Hindi /English.
4. How are they willing to participate in this study

Exclusion Criteria:

1. Being a health care worker
2. Lack of cooperation by the caregiver
3. How are not present at the time of study.
4. Above 20 year

LIMITATION

A study is limited to only above 20 years adolescent at NMCH, Rohtas because they are accessible to the researcher.

SELECTION AND DEVELOPMENT OF TOOL

A structured self-administered knowledge questionnaire was developed by the researcher in order to obtain answers from the caregivers in Narayan Medical College Hospital, Rohtas, Bihar (Sasaram). The tool was prepared after extensive review of literature search and consultation with expert

DESCRIPTION OF TOOL

PART-A: Patient demographic variables

It consists of various demographic variables of patient such as- age, gender, education, occupation, marital status, family income, duration of illness.

PART-B: Structured questionnaire

Structured questionnaire was used to assess the knowledge of post dialysis care among the caregivers of patient undergoing hemodialysis. It consists of 20 multiple choice questions including general information on chronic kidney disease and hemodialysis, nutrition, causes, sign and symptoms, complication, treatment.

III. DATA ANALYSIS

The scoring is designed as follows with structure questionnaire. There is total 20 items and each item 1 marks, if answer is correct give 1 marks, if answer is wrong give 0 marks.

Table: -1: Over all marks is 32 and to interpret the level of knowledge the score classified as:

Excellent knowledge	(31-40)
Good knowledge	(21-30)
Average knowledge	(11-20)
Poor knowledge	(0-10)

VALIDITY OF TOOL

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. (Polit and Hungler)The tool was submitted to four experts, comprising of one dialysis technician and three nurse educators from medical surgical nursing departments. Experts gave their suggestion and options about the content of tool. Modifications were incorporated in the final preparation of tool.

RELIABILITY OF TOOL

Reliability is the degree of consistency and accuracy with which an instrument measures the attribute for which it is designed to measures. (Suresh K. Sharma 2021)

Reliability of the tool was checked by the Karl Pearson's formula. It shows the reliability and - and hence the tool was found highly reliable.

DATA COLLECTION PROCEDURE

The data collection procedure was done for a period of one week. A written permission obtained from the medical superidentend to conduct the study in the dialysis department NMCH, Rohtas, Bihar.

ETHICAL CONSIDERATION

Administer the intervention was obtain from the caregivers of NMCH, Jamuhar, Rohtas, Bihar. written informed consent was obtained from the caregivers and explain the purpose of study.

Confidently and anonymity was maintained throughout the study.

PLAN FOR DATA ANALYSIS

Data was analysis was planned on the basis of objectives and hypothesis of the study.

The data obtained was analyzed by descriptive study inferential statistics. The plan of data analysis was as follow:

PART-A: Demographic variables of chronic kidney disease patient undergoing hemodialysis will be analyses by using frequency and percentage distribution.

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DOI: 10.48175/IJAR SCT-10653



PART- B: Comparison of pre- test and post- test knowledge score of regarding patient undergoing hemodialysis by test significance showing effectiveness of Structured Teaching Programme.

PART-C: Testing of relationship between patient and selected background variables like age, gender, occupation, education, marital status, family income. duration of illness information of chronic kidney disease patient, and source information.

IV. DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collection from the NMCH Sasaram. The analysis was done based on the objective of the research study.

OBJECTIVE

- 1.To assess the patient knowledge level of study subject regarding home care management of patient undergoing haemodialysis.
- 2.To assess the post-test knowledge score after giving the STP.
- 3.To compare the pre-test post-test the knowledge level.

HYPOTHESIS: -

H₁-Most of the people having poor knowledge in pre-test & post-test regarding home care management among caregiver undergoing haemodialysis.

H₂-Most of the people having average knowledge in pre-test & post test score after giving the Structured teaching program.

H₃-Most of the people having very good the knowledge level in pre- test & post test of the home care management.

SOCIO DEMOGRAPHIC VARIABLE FREQUENCY DISTRIBUTION

AGE

Table 1. Age Distribution N =30

Category	Frequency	Percentage
25-35 YEAR	18	60%
35-45 YEAR	11	36.66%
45 and above YEAR	1	3.33%

GENDER

Table.2. Gender Distribution (N=30)

Category	Frequency	Percentage
Male	27	90%
Female	3	10%

EDUCATION

Table.3. Education Distribution N=30

Category	Frequency	Percentage
10 TH	8	26.66%
12 TH	4	13.33%
Graduate	16	53.33%
Uneducated	2	6.66%

OCCUPATION

Table.4. Occupation Distribution N=30

Category	Frequency	Percentage
Farmer	10	33.33%
Govt. Job	1	3.33%
Private Jobs	15	50%
labor	4	13.33%

MARITAL STATUS

Table.5. Marital Status Distribution N=30

Category	Frequency	Percentage
Married	20	66.66%
Unmarried	10	33.33%

FAMILY INCOME

Table.6. Family Income Distribution N=30

Category	Frequency	Percentage
10000-20000/Month	10	33.33%
20000-30000/Month	11	36.66%
30000-40000/Month	5	16.66%
40000-50000/Month	4	13.33%

DURATION OF ILLNESS

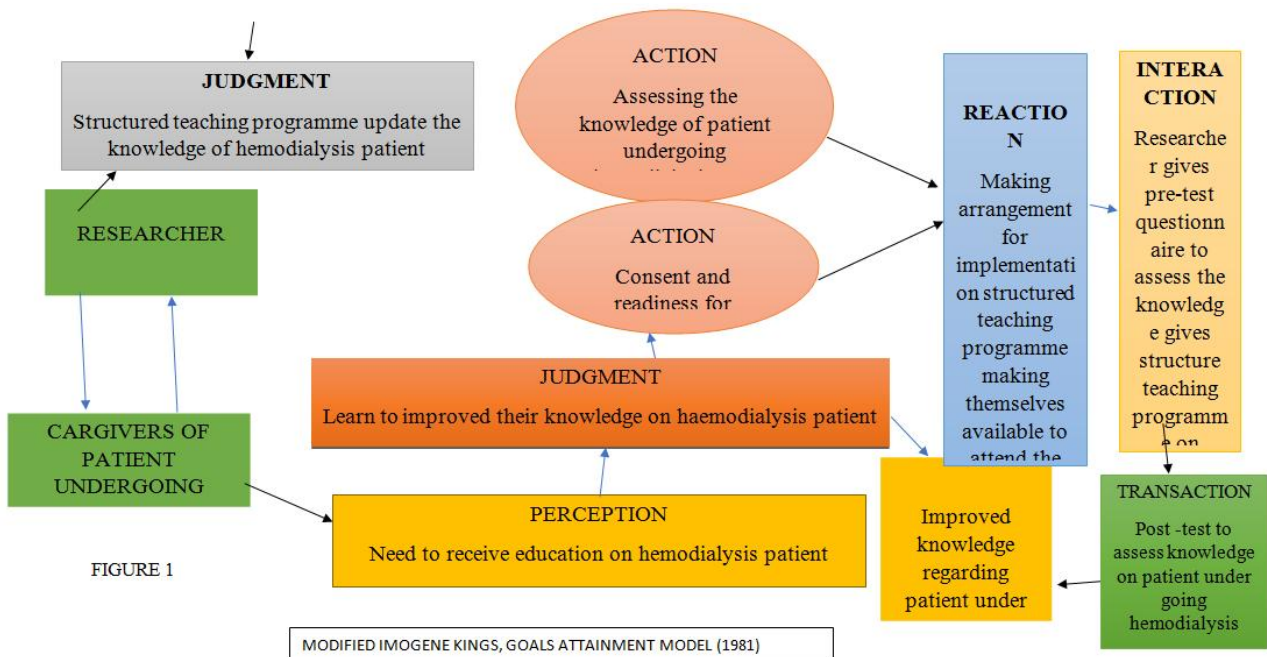
Table: -7. Duration of Illness N=30

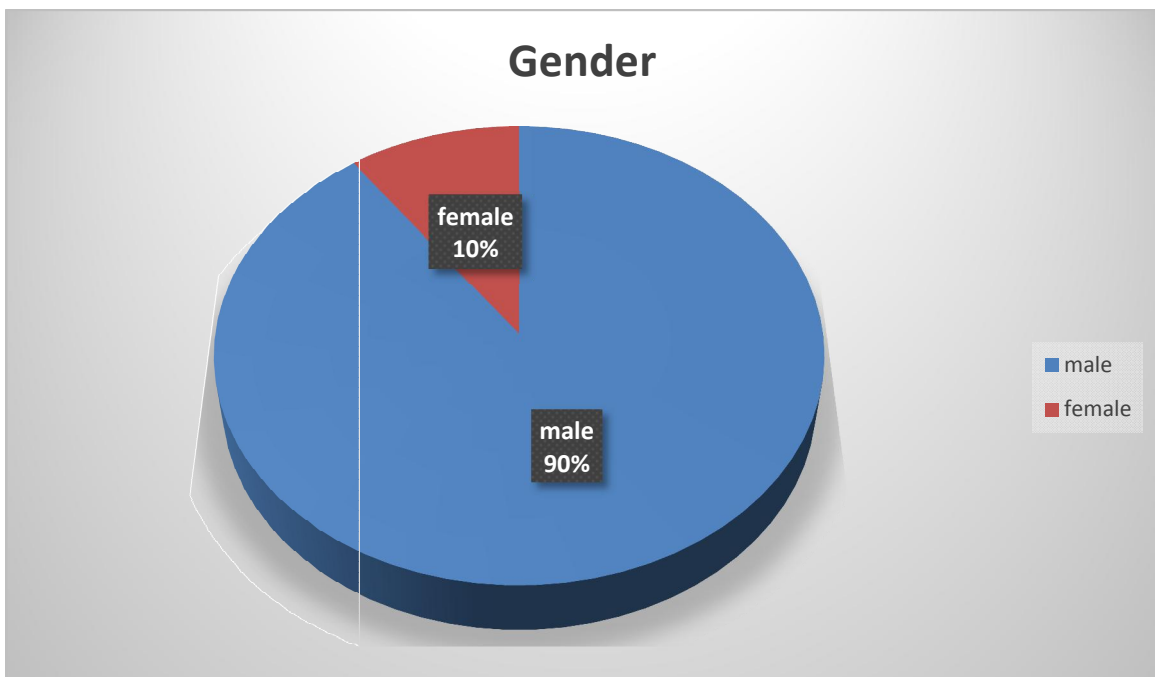
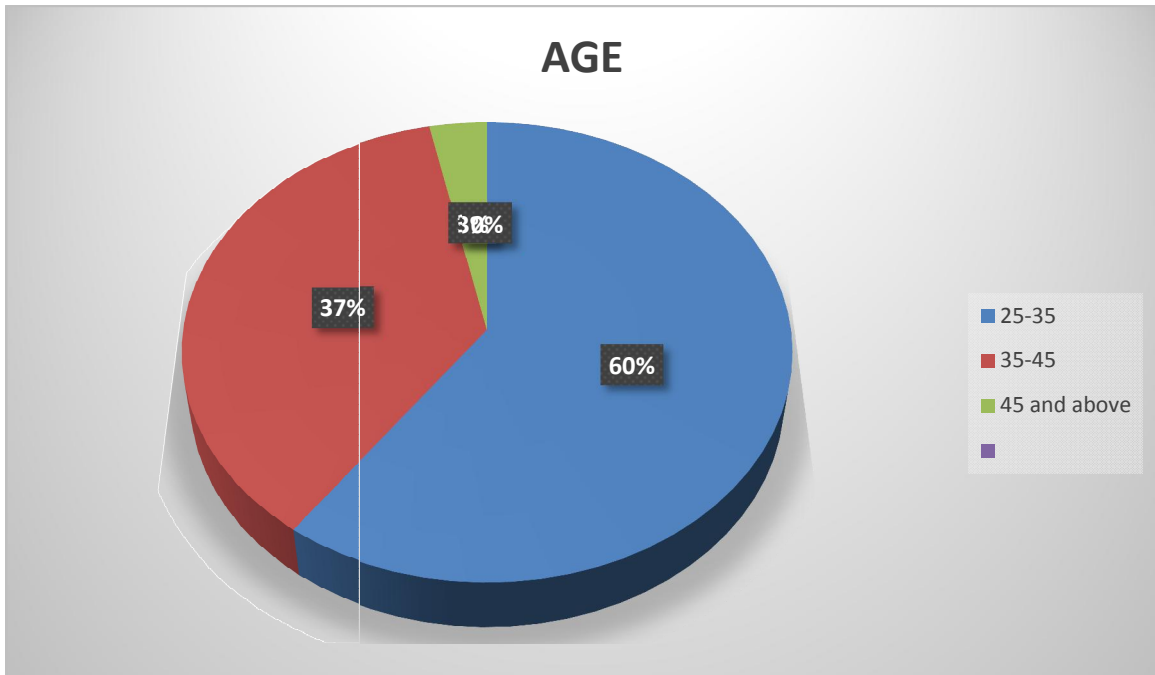
Category	Frequency	Percentage
6month	7	23.33%
1year	13	43.33%
3year	9	30%
5year	1	3.33%

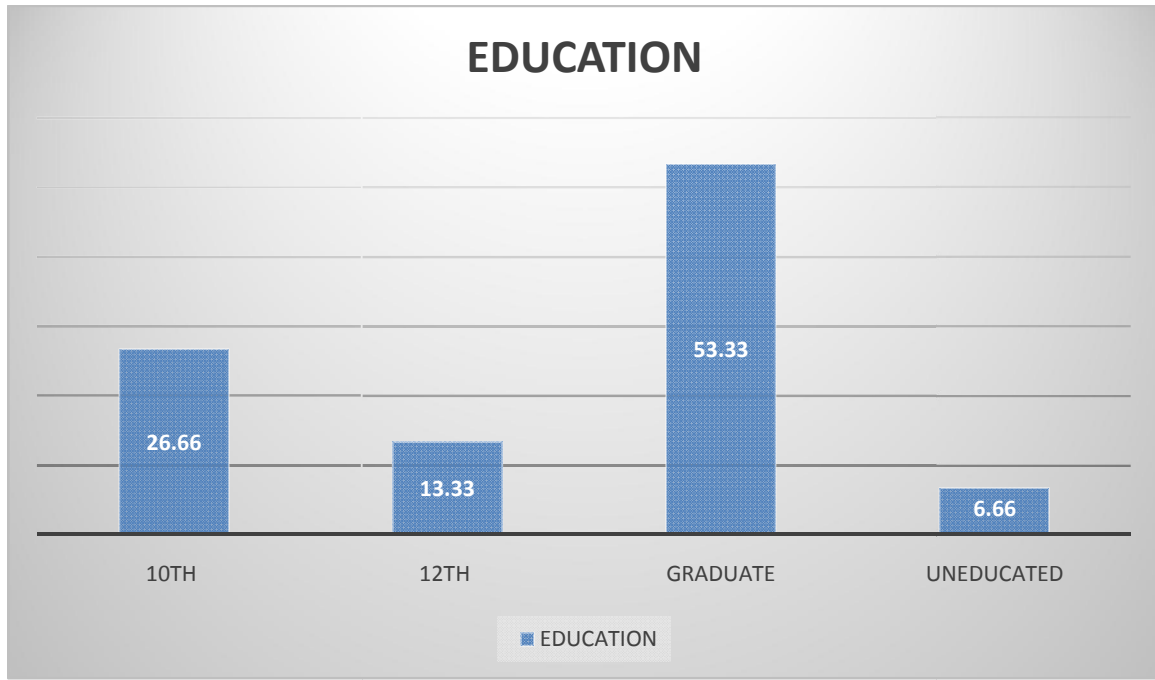
PLACE OF RESIDENCE DURING HEMODIALYSIS

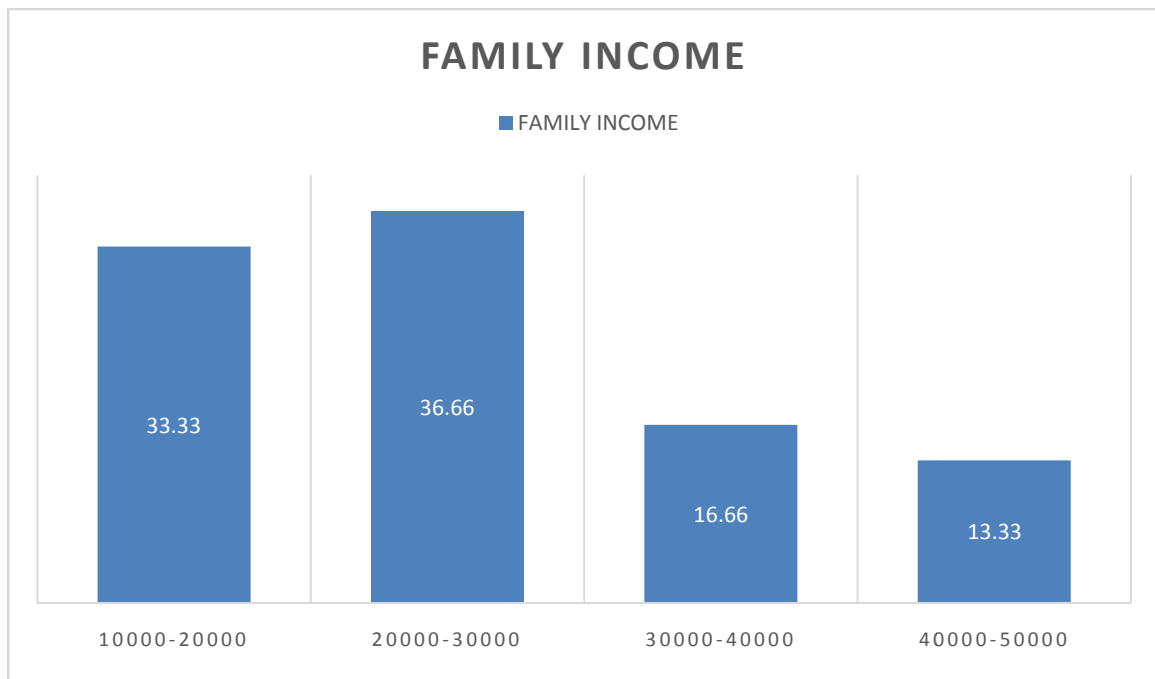
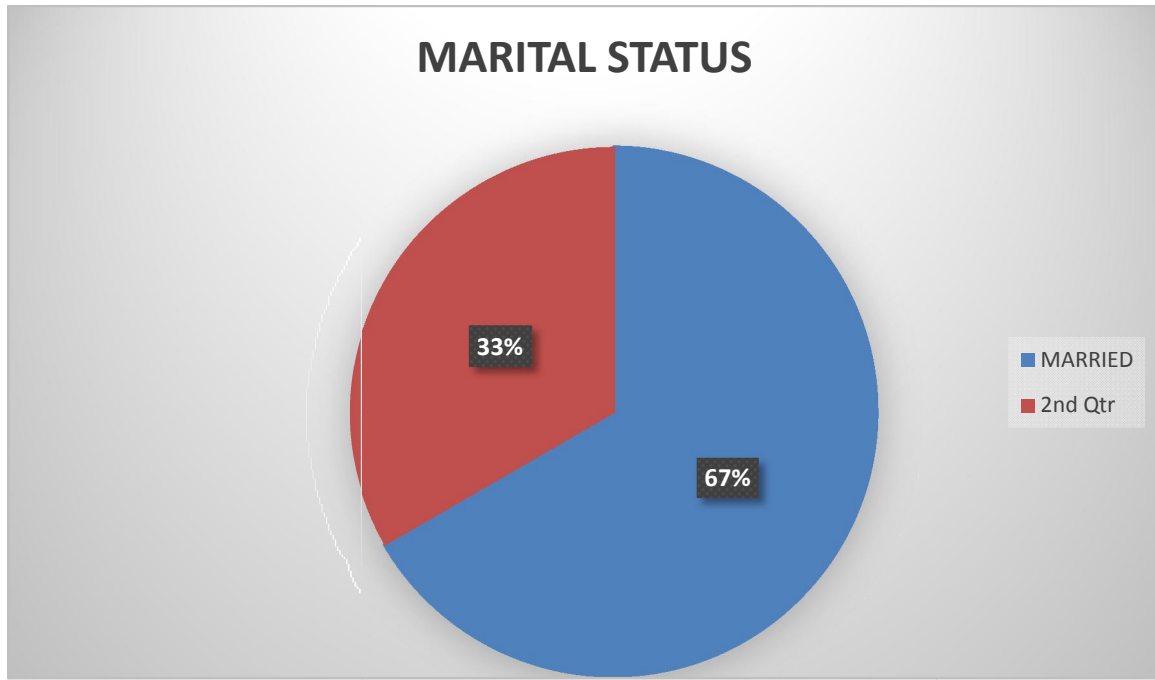
Table: -8. N=30

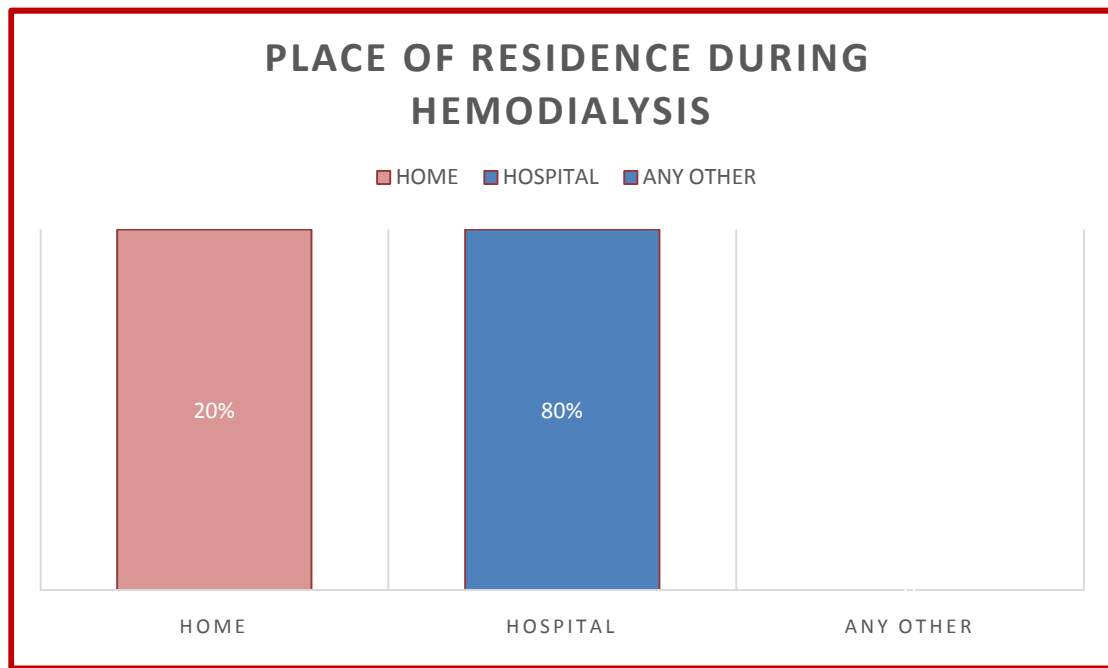
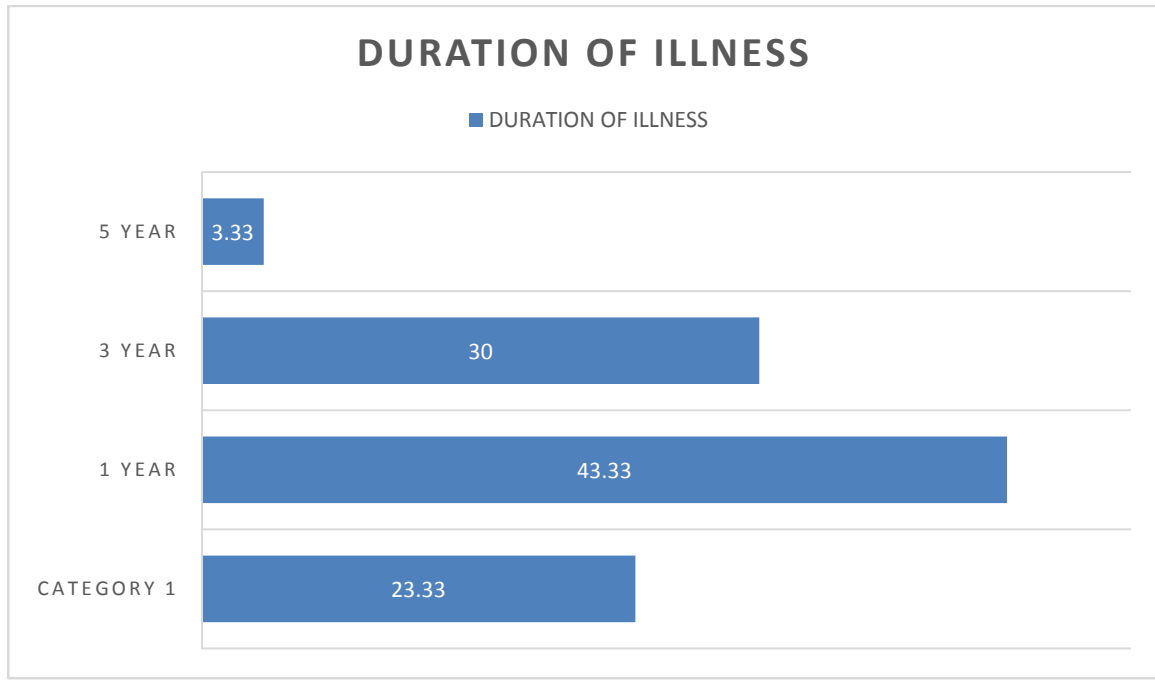
Category	Frequency	Percentage
HOME	6	20%
HOSPITAL	24	80%
ANY OTHER	0	0%











LIKERT SCALE

Table: -9

Category	CLASS	FREQUENCY
Very Unaware	0-4	0
Unaware	5-8	8
Neither Unaware nor Aware	9-12	15
Aware	13-16	7
Very Aware	17-20	0

Most of the population at 15 falls under Neither Aware nor Unaware category making them average, 8 were in unaware category and the rest of 7 were in aware category. Hence,

Hypothesis H1 is rejected

Table: -10

Category	CLASS	FREQUENCY
Very Unaware	0-4	0
Unaware	5-8	0
Neither Unaware nor Aware	9-12	0
Aware	13-16	12
Very Aware	17-20	18

Most of the population at 18 falls under very aware category making them above average, and 12 were in aware category. Hence,

Hypothesis H2 is accepted.

t test

Table: -11.

Group	PRE-TEST	POST-TEST
Mean	10.47	16.7
SD	2.96	1.76
SEM	0.54	0.32
N	30	30

P value and statistical significance: The two-tailed P value is less than 0.0001, by conventional criteria, this difference is considered to be extremely statistically significant.

Confidence interval: The mean of pre minus post equals -6.23, 95% confidence interval of this difference: From -7.33 to -5.13

Intermediate values used in calculations: $t = 11.5965$, $df = 29$, standard error of difference = 0.538. Hence, **Hypothesis H3 is accepted**

V. DISCUSSION

This chapter deals with the detail discussion of the findings of the study interpreted from statistical analysis. The findings are discussed in relation to the objectives formulated, compared, contrasted with dose of other similar study conducted in different settings.

The present study is an effort to the pre-test knowledge regarding home care management among caregiver undergoing haemodialysis in order to achieve its objectives. A Study was adopted, and purposive sampling was used to collect the data. This study was conducted in one week at NMCH, Jamuhar, Sasaram, Rohtas. The data was collected during working hours using 5-point Likert scale of awareness.

VI. MAJOR FINDINGS

Major findings of the socio-demographic data

From the above collected data, majority of the sample at 60% were in the category of 25- 35 years. Next majority of the sample at 37% lied in the category of 35 – 45 years and ultimately the remaining minorities at 3% were the categories of 45 years and above.

From the above collected data, majority of the sample at 90% were Male. The rest of the sample at 10% were Female.

From the above the collected data, majority of the sample at 53.33% were in the graduate qualified. next majority of the sample at 26.66 % lied in 10th standard. About 13.33 % of the collected data were from the categories of 12th standard and ultimately the remaining minority at 6.66 % were in the categories of under graduate qualified.

From the above the collected data, majority of the sample at 50% were in the Private job. next majority of the sample at 33.33 % lied in farmer. About 13.33 % of the collected data were from the categories of labour and ultimately the remaining minority at 3.33 % were in the categories of under Govt job.

From the above collected data, majority of the sample at 67% were married. The rest of the sample at 33% were unmarried.

From the above the collected data, majority of the sample at 36.66% were in the 20,000-30,000. next majority of the sample at 33.33 % lied in 10,000-20,000. About 16.66 % of the collected data were from the categories of 30,000-40,000 and ultimately the remaining minority at 13.33 % were in the categories of under 40,000-50,000.

From the above the collected data, majority of the sample at 43.33% were in the category of 1 year. next majority of the sample at 30 % lied in the category of 3 year. About 23.33 % of the collected data were from the categories of 6 months and ultimately the remaining minority at 3.33 % were in the categories of 5 year.

From the above collected data, majority of the sample at 80% were Hospital. The rest of the sample at 20% were Home. This finding is supported by A Study conducted on a inscriptive, cross-sectional by **Nel M and. Berg den VL. Spies HC. (2020)**

The majority of the samples were from Urban are of residence at 70% and about only 30% in comparison were from rural area of residence. This study was supported by A Pre-Experimental Study to Evaluate the Effectiveness of Structure Teaching Program on Home Care Management of Patient Undergoing Hemodialysis Among Their Care Giver in NMCH Jamuhar.

From the above the collected data, majority of the sample at 53.33% were in the graduate qualified. next majority of the sample at 26.66 % lied in 10th standard. About 13.33 % of the collected data were from the categories of 12th standard and ultimately the remaining minority at 6.66 % were in the categories of under graduate qualified.

This study was supported by A structured, self-administered questionnaire was used to collect data for this study. The instrument was developed following an extensive literature review guided by the objectives of the study and validated by subject experts. **Kanagarajah, Supriya Velraja, Hemamalini Janardhanan Arambakkam:** 2022 belonged to the high-income group (less than Rs. 6254); 52 (43.3%) of the samples belonged to the middle-income group (Rs. 3127–6253) and 3 (2.5%) of the samples belonged to the low-income group, according to BG Prasad's socioeconomic status scale

Furthermore, the data depicted that half of the sample's mother were educated up to graduation at 50%, while the other half were dividing as 30% Matriculation qualification and 20% Intermediate qualification.

This study was supported by A study was conducted on a Effectiveness of structured Teaching programme (STP) on knowledge regarding renal care (Dialysis) at home among the Education status reveals that 13.3% had higher secondary course, 13.3% had upper Primary, 45% had primary and 3.33% graduate and post graduate education care givers of renal failure patients at Gujrat. Education status reveals that 13.3% had higher secondary course, 13.3% had upper Primary, 45% had primary and 3.33% graduate and post graduate education. **Pandya Hardik, Kumawal Raj Shalini (2020)**

From the above the collected data, majority of the sample at 50% were in the Private job. next majority of the sample at 33.33 % lied in farmer. About 13.33 % of the collected data were from the categories of labour and ultimately the remaining minority at 3.33 % were in the categories of under Govt job.

This study was supported by by A study was conducted on a Effectiveness of structured Teaching programme (STP) on knowledge regarding renal care (Dialysis) at home among the care givers of renal failure patients at Gujrat **Pandya Hardik, Kumawal Raj Shalini (2020).**

Major Findings of Level of Knowledge

In the present study, 5-point Likert scale was used to determine the level of knowledge among the sample, most of the population at 15 falls under Neither Aware Nor Unaware category making them average, 8 were in unaware category and the rest of 7 were in aware category. Hence. This study was supported by A study was conducted on a study to assess the effectiveness of self-instructional module on knowledge regarding home care management among patients undergoing hemodialysis in selected hospitals at Kollam. The collected data were analyses by using descriptive and inferential statistics. The result of pertest shows that 10% of hemodialysis patients had poor knowledge and 60% had average knowledge and 30% had good knowledge. After providing self-instructional module the result of post-test shows that among the samples 10% of patients attained average knowledge, 63.33% got good knowledge and 26.67% had excellent knowledge **Thomas Allana, sunny Ashlin, Jose Jasmin (2019)**

VII. SUMMARY

The purpose of study was to evaluate the effectiveness of structure teaching programme on knowledge regarding patient undergoing hemodialysis care among caregiver who visited dialysis department at NMCH, Rohtas, Bihar. The finding of study has been based on the finding obtained from statistical analysis of collected of data. Comparison pre-test and post- test knowledge. Likert scale test was used to find out the association of selected demographic variable.

VIII. CONCLUSION

After meticulous data collection and interpretation, it was found that most of the population at 15 falls under Neither Aware nor Unaware category making them average, 8 were in unaware category and the rest of 7 were in aware category; Most of the population at 18 falls under very aware category making them above average, and 12 were in aware category; student t test revealed extremely statistically significant between pre- test and post test score. Hence, it is required to have STP program in future regarding hemodialysis to improve nursing care to the patient.

IX. IMPLICATION

The finding of study in study several implications. The result proved the structured teaching programme regarding patient undergoing hemodialysis had a significant effect in improving the knowledge of caregiver. The finding of the several implications which home care for caregiver. Nursing services. Nursing education. Nursing administers. Nursing research.

NURSING PRACTICE:

Basic nursing education is a formally recognized programme of study providing a broad and sound foundation in the behavioral, life, and nursing sciences for the general practice of nursing, for a leadership role, prevention, assessment, diagnosis, treatment, monitoring, complications and for post-basic education for specialty or advanced nursing practice. Nursing practice involves advocacy for the rights of the individual patient and for their family. It also involves advocacy on behalf of nursing practice in organizational and management structures within nursing.

NURSING SERVICES

Booklet can be introduced as a clinical routine in patient undergoing hemodialysis and nurse can be adopted it a part of health education programme to improve the knowledge regarding patient undergoing hemodialysis care among giver. Nurse can develop evidence-based practice and included structured teaching programme to become integral nursing intervention

NURSING EDUCATION

In-service education programme should be attended by nurse to update their knowledge regarding patient undergoing hemodialysis, there by promoting nursing students to plan and implement the teaching programme as a part of health education Periodic symposium seminar conference and work shop can be conducted update the information

NURSING ADMINISTRATION

The nurse administration can support the nurse for conducting research on various aspect on dialysis
The nurse administer can organize a conference on hemodialysis patient undergoing hemodialysis education programme and motivate the staff nurse to actively participate in such activities

NURSING RESEARCH

Nursing research about structured teaching programme on patient undergoing hemodialysis become valuable reference material for further research.

RECOMMENDATION

An effectiveness of structured teaching programme on knowledge regarding undergoing hemodialysis patient home care management and attitude among caregiver of patient undergoing hemodialysis.

A follow of study can be done.
Comparative study can be conducted to evaluate of caregiver.

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