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EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF INFECTIOUS COMPLICATIONS AMONG HEMODIALYSIS PATIENTS Sandesh A Wamane¹, Gajanand R Wale^{2*}, Rajula Asir R³

¹Beleshwar Institute of Nursing Sciences, Parabhanai, Maharashtra 431401, India.
²K T Patil College of BSc Nursing, Osmanabad, Maharashtra 413501, India.
³Nazarane Nurses Training College, Washim, Maharashtra, India.

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ABSTRACT

Background: "Hemodialysis means cleaning the blood"- and that is exactly what this treatment does. It is a therapy for irreversible renal failure which removes waste products or toxic substances from the blood and must be continued intermittently for the client's life time, unless successful kidney transplantation is done. Hemodialysis is the most successful and more commonly used renal replacement therapy. It is also associated with infectious complications are the most dangerous which will affect adversely on the treatment process and deteriorates patients existing condition. Aim: Pre Experimental study was conducted to assess effectiveness of structured teaching programme on knowledge regarding prevention of infectious complications among hemodialysis patients. A sample of 50 patients undergoing hemodialysis were selected by purposive sampling technique from selected hospitals of Davanagere. The data collected were analyzed and interpreted based on descriptive and inferential statistics. Findings: The findings revealed that, post test knowledge score M=19.12 (Mean Percentage=76.48) with Standard Deviation 3.25, was higher than the pretest score M = 19.12 (Mean Percentage=48.80) with Standard Deviation 3.78. The obtained mean difference was 6.92 and 't' value, t = -24.74 (P=.000) was highly significant. Conclusion: It was inferred that the Structured Teaching programme had significantly increased the knowledge on infectious complications and its prevention among Hemodialysis patients.

INTRODUCTION

Kidneys play vital role in waste excretion, blood pressure control, and electrolyte balance. End Stage Renal Disease [ESRD] is a life threatening condition which occurs when kidneys stop functioning. ESRD cannot be cured. For these patients life can be sustained only through renal transplantation or dialysis. Hemodialysis is the most commonly used renal replacement therapy.

Corresponding Author

Gajanand R Wale E-mail: gajanandrwale@gmail.com

Research Article

There are an estimated 400 dialysis units in India (0.4 p.m.p) with about 1000 dialysis stations, more than two thirds being in private sector [1]. Uremic and infectious complications together accounts for 57% of all deaths in patients receiving dialysis treatment [2].

Bacterial infections are the most frequent infectious complications because the process of hemodialysis requires vascular access for prolonged periods. In an environment where multiple patients receive hemodialysis concurrently, repeated opportunities exist for person to person transmission of infectious agents; directly or



indirectly via environmental surfaces or contaminated hands of the patient. Furthermore, hemodialysis patients are immune suppressed, which increases their susceptibility to infections and they requires frequent hospitalization [3].

Need For the Study

By 2001, more than one million patients received dialysis treatment, with the number growing at an annual global average rate of 7%. The mean age of ESRD patients in India is between 32-42 years, compared to 60 and 63 years in developed countries. At the end of year 2004, some 17, 83,000 people were undergone treatment for End Stage Renal Disease; 13, 71,000 (77%) were received dialysis treatment, among them 12, 22,000 (89%) were treated by hemodialysis. 52% of the global dialysis population was treated in just four countries: the USA, Japan, Brazil and Germany-although these four countries accounted for only around 11% of the world population. Higher numbers of dialysis patients reside in Japan compared with all other Asian countries together. Based on an extrapolation of the 2004 it is expected that the number of dialysis patients to approach 2 million by the year 2010. Developing countries, in particular, the average age of a patient commencing dialysis is considerably lower there than in developed countries. The majority of HD patients worldwide underwent in-centre dialysis treatment. At year end 2004, HD patients were treated in approximately 22,700 centres worldwide with an average of 54 patients per centre. Globally, around 0.4% of all HD patients (5200 patients) were performing HD in the home environment [4].

According to U.S. Renal Data System (USRDS) 2001, an infectious complication is the second leading cause of death among dialysis patients, accounting for 33 deaths per 1000 patients. Septicemia accounts for 79.7% of infectious deaths [5].

Patients with hemodialysis catheters are at the greatest risk of Staphylococcus aureus bacteremia, followed by grafts. S.aureusare much more common in nasal carriers. It moves from nasal reservoir to the hands and skin then from there to infect the access. Therefore, prevention of infection can be aimed at treating the carriage or applying antibiotics at the catheter exit site and maintaining personal hygiene of the patient, thus preventing colonization and subsequent infection of the catheter [6]. Hence the investigator felt that there is a burning need to educate the patients regarding prevention of infectious complication of hemodialysis, so that they 62% were in the age group of 35 - 50 years; 66% were males; 76% were married; 50% were from Hindu religion; 42% were studied up to primary school; 56% were urban residents; 30% were belonged to in service (Govt. /Private) occupation; 38% had family income of 2000-

Objectives

1. To assess the knowledge of patients regarding infectious complications of hemodialysis and its prevention.

2. To determine the effectiveness of structured teaching programme.

3. To associate the findings of the study with selected demographic variables.

Hypothesis

H-1: There will be significant difference between pre and post test scores of knowledge regarding

Infectious complication of hemodialysis and its prevention.

H-2: There will be significant association between the level of Knowledge regarding infectious complication of hemodialysis and its prevention with selected variables. **Methodology**

Research approach: An evaluative research approach was considered to be the most appropriate

and adopted to achieve intended objectives.

Research design: One group pre-test post-test design was adopted for the study.

Setting: The study was conducted in C.G.Hospital, Davanagere.

Population: Study comprises of Hemodialysis patients of C.G.Hospital, Davanagere.

Sample: Study consists of 50 Hemodialysis patients of C.G.Hospital, Davanagere.

Sample Technique: Purposive sampling technique was adopted to select the samples for the present study.

Sampling Criteria: Inclusion Criteria

- 1. Willing to participate in the study.
- 2. Above the age of 35 years.
- 3. Able to communicate in Kannada.

Exclusion Criteria

- 1. Not willing to participate in the study.
- 2. Below the age of 35 years.

RESULTS

Section 1: Description of Demographic variables of hemodialysis patients.

In this study 50 hemodialysis patients had participated. Majority of the Hemodialysis Patients :

5000/- per month; 52% were belonged to nuclear family; 54% were undergoing Hemodialysis treatment for more than 6 months. These findings with supported by the earlier studies done by Kerrib L. Cavanaugh and Tom A. Elasy et.al., (2010) [7]., Mirkka Rantanen and Sanna



Salantera et.al., (2008) [8]. Where in relation to gender highest were males (63%) and were married (64%).

Section 2: Data on knowledge of hemodialysis patients on infectious complications of hemodialysis and its prevention.

Table 1 deal with Mean, SD, Range regarding knowledge on infectious complications of hemodialysis and its prevention before and after STP among hemodialysis patients.

Results revealed that mean of post test knowledge score M=19.12 (Mean Percentage=76.48) with Standard Deviation 3.25, was higher than the pretest score M = 19.12 (Mean Percentage=48.80) with Standard Deviation 3.78.It was inferred that there was an increase in knowledge regarding infectious complications of hemodialysis And its prevention after the Structured Teaching programme. These findings with supported by the earlier studies done by Kerrib L. Cavanaugh and Tom A. Elasy et.al., (2009) [7]., Mirkka Rantanen and Sanna Salantera et.al., (2008) [8]., Piccoli GB, Mezza E and Iacuzzo C (2002) [9]., where there was assessment is done on knowledge of Hemodialysis.

Section 3: Data on determining the effectiveness of structured teaching programme.

For the purpose of the study the following null hypothesis was formulated H_{01} . There will be no significant difference between pre test and post test scores of knowledge regarding infectious complications of hemodialysis and its prevention.

Table 2 reveals the mean difference and 't' valueregardingpretest, post-testknowledgeregardinginfectiouscomplicationsofhemodialysisanditsprevention among Hemodialysis patients.

The obtained mean difference was 6.92. The obtained 't' value, t = -24.74 (P=.000) was highly significant. Therefore the Null Hypothesis (H₀₁) was rejected. It was inferred that the Structured Teaching programme had significantly increased the knowledge on infectious complications of hemodialysis and its prevention among Hemodialysis patients. These findings with supported by the earlier studies done by Cesarino CB and Casagrande LD (1998) [10], BS Sathvik and Seema Mangasuli et.al., (2007) [11]., where effectiveness of structured teaching programme is determined.

Section : 4 – Data on association between the findings of the study with selected demographic variables.

For the purpose of the study the following null hypothesis was formulated H_{02} . There will be no significant association between the level of knowledge regarding infectious complications of hemodialysis and its prevention with selected background variables.

Chi-Square Test on findings of the study regarding knowledge on infectious complications of Hemodialysis and its prevention among Hemodialysis Patients.

 Table 3 reveals the association between findings

 of the study in knowledge score and selected background

 variables among Hemodialysis Patients.

'χ²' obtained values regarding The Age $\chi^{2=}0.233$ (P=0.890),Gender $\chi^{2=}0.836$ (P=0.361), Marital status $\chi^{2=2.652}$ (P=0.449), Religion $\chi^{2=6.450}$ (P=0.092), Educational Status $\chi^{2=3.758}$ (P=0.289), Place of Residence $\chi^{2=0.574}$ (P=0.449), Occupation $\chi^{2=0.771}$ (P=0.856), Family income/month $\chi^{2=0.946}$ (P=0.623), Type of family $\chi^{2=0.674}$ (P=0.714), Length of undergoing Hemodialysis treatment $\chi^{2=0.005}$ (P=0.945) were not associated with gain in knowledge regarding infectious complications of hemodialysis and its prevention among Hemodialysis patients. The above findings with supported by the earlier studies done by Rebecca L. Wingard and Raymond M. Hakim et..al., (2009) [12]., Braden J Manns et.al., (2005) [13]., revealed that prevention and informative measures were associated with use of an arteriovenous access for dialysis.

 Table 1. Mean, SD, Range regarding knowledge on infectious complications of hemodialysis and its prevention before and after STP among hemodialysis patients

					IN=30
Knowledge	Max	Mean	Mean Percentage (%)	Range	SD
Pretest	21	12.20	48.80	15	3.78
Posttest	24	19.12	76.48	11	3.25



 Table 2. Mean difference and 't' value regarding pretest, post test knowledge regarding infectious complications of hemodialysis and its prevention among Hemodialysis patients

				N=50
Knowledge	Mean	Mean difference	't' value	Inference
Pretest	12.20	6.02	t = -24.74	Highly Significant
Posttest	19.12	0.92	P = 0.000	riginy significant

 Table 3. Association between findings of the study in knowledge score and selected background variables among

 Hemodialysis Patients

		1			Mean diffe	erence (MD) =6.92
	Background Variables	Knowledge			Chi-square	
Sl.No		At & Above mean Difference	Below mean Difference	Total	Value (χ^2)	Significance
1	AGE					NS
	35-50 years	18	13	31	$\chi^{2=0.233}$	
	51-60 years	6	6	12		
	61 years and above	4	3	7	P =0.890	
	GENDER				$w^{2}=0.026$	NS
2	Male	20	13	33	$\chi = 0.830$ P =0.261	
	Female	8	9	17	P =0.501	
	MARITAL STATUS					NS
	Married	19	19	38		
3	Unmarried	2	1	3	$\chi^{2=2.652}$	
	Divorced	2	1	3	P =0.449	
	Widow/Widower	5	1	6		
	RELIGION					NS
	Hindu	15	10	25	$\chi^{2=6.450}$ P =0.092	
4	Muslim	7	6	13		
	Christian	6	2	8		
	Others	0	4	4		
	EDUCATIONAL					NS
	STATUS					
5	Primary	13	08	21	·· ² =2 759	
5	High school	4	7	11	χ 3.738 D -0.280	
	P.U.C	3	4	07	F =0.269	
	Graduation and above	8	3	11		
	PLACE OF					NS
6	RESIDENCE				$x^{2=0.574}$	
	Urban	17	11	28	$\chi = 0.374$ P -0.449	
	Rural	11	11	22	1 -0.449	
7	OCCUPATION					NS
	Agriculture	8	5	13		
	Business	7	6	13	$\alpha^{2=0.771}$	
	In service	Q	6	15	$\mathbf{P} = 0.856$	115
	(Govt./Private))	0	15	1-0.050	
	Others	4	5	09		

N = 50Mean difference (MD) -6.92



8	FAMILY INCOME/MONTH 2000-5000/- 5001-10000/- 10001/- and above	09 10 09	10 06 06	19 16 15	χ ²⁼ 0.946 P =0.623	NS
9	TYPE OF FAMILY Nuclear Joint Extended	16 10 2	10 10 2	26 20 04	χ ²⁼ 0.674 P =0.714	NS
10	LENGTH OF UNDERGOING HEMODIALYSIS TREATMENT Less than 6 months More than 6 months	13 15	10 12	23 27	χ ²⁼ 0.005 P =0.945	NS

S: Significant

CONCLUSION

It was concluded that, incidence of infectious complications is more among Hemodialysis Patients, but they are lacking adequate knowledge regarding Infectious complications of hemodialysis and its prevention. The planned teaching programme is an effective method to increase their knowledge. Hence, health care professionals should give importance to health education on Infectious complications of hemodialysis and its prevention in patient teaching programme and take interest to promotion of health among Hemodialysis Patients. This study gave the evidence that, through planned teaching programme, knowledge of Hemodialysis Patients regarding Infectious complications of hemodialysis and its prevention can be improved.

NS: Non Significant

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