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Effectiveness of Interventional Package on Health Practices among Patients with Haemophilia

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Abstract: ***The present study investigated the effectiveness of interventional package on health practices among patients with haemophilia in Govt. Medical College Hospital, Kottayam. A quantitative research approach was used for the study. The study was theoretically supported by Betty Neuman's system model. A total of 64 patients, 32 in control and experimental group, were selected for the study using non probability purposive sampling technique. The data were collected using socio personal and clinical data sheet and health practice rating scale prepared by the investigator. Pretest was conducted for both control and experimental group on first day of assessment. After conducting pretest, interventional package was given to the patients in experimental group. The interventional package consisted of structured teaching programme on personal hygiene, activity and exercise, compliance to therapeutic regimen and prevention of complications. Post test was conducted on 28th day of initial assessment. The result of the study revealed that interventional package had a significant effect on health practices (p<0.01) among patients with haemophilia.***

Keywords: health practices, interventional package, structured teaching programme

1. Introduction

Haemophilia is an inherited X - linked recessive bleeding disorder, which is caused by the deficiency of coagulation factor VIII (haemophilia A) or coagulation factor IX (haemophilia B) related to mutations of the clotting factor gene. In this condition blood does not clot normally. Depending upon the coagulation factor activity, it is classified as mild (5 - 40 IU/dL or 5% to <40% of normal), moderate (1 - 5 IU/dL or 1% - 5% of normal) or severe (<1 IU/dL or <1% of normal). Due to the sex linkage of the disorder, there is a greater prominence in males than females [1]. A global survey conducted in 120 countries by World Federation Haemophilia in 2020 found out 347, 026 haemophilia cases worldwide, out of which 209, 614 are Haemophilia A, 33, 079 are Haemophilia B, 11, 159 are Haemophilia type unknown, 84, 197 are von Willebrand disease and 53, 215 are with other bleeding disorders. India is reported with the highest burden of haemophilia with 22, 594, followed by USA with 14, 816 cases. Among the 22, 594 haemophilia cases in India haemophilia A is 18, 928 and haemophilia B is 3, 104. About 43 % of patients with haemophilia A were within the age group of 19 - 44 years and 48 % of patients with haemophilia B were within 19 - 44 years [2]. According to the Surveillance of Kerala state registry of people with haemophilia in 2020 there were 3600 haemophilia patients in Kerala. Among that only 1724 cases were registered. Out of 1724, about 900 were registered at Haemophilia Treatment Centre Aluva [3]. Although bleeding may occur in any part of the body, the hallmark of haemophilic bleeding is hemarthrosis. The initial joint haemorrhages appear most commonly in the ankle [4]. Compared to healthy person, haemophilic patients had decreased muscle strength. Regular exercising for 30 minutes, at least 3 times in a week may help in decreasing or preventing the progression of haemophilic arthropathy. Regular participation in physical activity is an important component of the management of haemophilia [5].

Objectives

1) To assess the health practices among patients with haemophilia
2) To evaluate the effectiveness of interventional package on health practices among patients with haemophilia

2. Materials and methods

Quantitative research approach was selected for the study. The study design used was quasi experimental pretest post test control group design. Non probability purposive sampling technique was used to select the subjects in which 32 subjects in control group and 32 subjects in experimental group among patients with haemophilia attending Haemophilia Clinic at Govt. Medical College Hospital, Kottayam. Inclusion criteria include patients with haemophilia who are in the age group of 18 - 50 years and able to understand Malayalam. Patients with haemophilia who are having hemarthrosis and cognitive impairment were excluded from the study. Socio personal and clinical data sheet and health practice rating scale were prepared by the investigator were used in the study. First thirty - two subjects were allocated to the control group. The investigator met the study participants individually, the purpose of the study was explained and informed consent was obtained from the subjects who met the inclusion criteria. The pretest was conducted on first day of visit. After completing data collection from the control group, data were collected from 32 subjects in the experimental group. After the pretest interventional package was administered on experimental group. Post test was conducted for control and experimental group after 28 days using the same tool. Interventional package includes structured teaching

programme on personal hygiene, activity and exercise, compliance to therapeutic regimen and prevention of complications for 10 minutes. Data were analysed using descriptive and inferential statistics based on the objectives of the study.

3. Result

3.1 Findings related to the sample characteristics

Among 64 patients, more than half of patients in control group (56.25%) and 43.75% patients in experimental group belonged to the age group of 18 - 30 years. The data showed that 46.87% patients in control group and 37.5% patients in experimental group had degree and above qualification. And 25% patients in both groups had professional or technical education. The data revealed that 37.5% patients in control group were unemployed and 31.25% patients in experimental group were self - employed. The data depicted that majority of patients in control group (93.75%) and experimental group (87.5%) belonged to nuclear family. The data showed that more than half of the patients in control group (59.38%) and experimental group (62.5%) were unmarried. And 40.62% patients in control group and 37.5% in experimental group were married. The data pointed out that majority of patients in control group (75%) and experimental group (81.25%) were living in rural area. The result depicted that majority of patients in control (53.12%) and experimental group (68.75%) belonged to BPL category.

The data showed that 75% patients in both groups were having Haemophilia A and 25% patients in both groups were having Haemophilia B. The data reveals that majority of patients in control group (81.26%) and experimental group (78.13%) had severe haemophilia. The data showed that more than half of patients in control (68.75%) and experimental group (78.13%) were not had any comorbidities. Also, 9.38% of the patients in control and experimental group had arthritis and both DM and HTN respectively. The data showed that 96.88% patients in both groups were not had any parental consanguinity. Only 3.12% patients in both groups had parental consanguinity. The data revealed that 46.88% of patients in control and 53.12% patients in experimental group had family history. The data showed that majority of patients in control group (78.12%) and experimental group (71.88%) had no history of death of family member associated with haemophilia. The data showed that 43.75% in control and 37.5% patients in experimental group had more than 3 hospitalisations in last one year. The data revealed that knee joint was the most frequently bleeding joint in control (46.87%) and experimental group (65.62%).

3.2 Findings related to health practices among patients with haemophilia

Table 1: Frequency distribution and percentage of patients with haemophilia in control group and experimental group based on health practices (n=64)

Health practices	Control group (n=32)		Experimental Group (n=32)		df	χ^2	p
	f	%	f	%			
Good (41 - 60)	24	75	22	68.75	1	0.30	0.58
Moderate (21 - 40)	8	25	10	31.25			
Poor (0 - 20)	0	0	0	0			

Table 1 depicts that majority of patients in control (75%) and more than half of patients in experimental group (68.75%) had good health practices. Chi square value shows that there was no statistically significant difference between control and experimental group. Hence both groups were homogenous in terms of health practices.

Table 1 (a) Frequency distribution and percentage of patients with haemophilia based on domain personal hygiene (n=64)

Personal hygiene	Control group (n=32)		Experimental Group (n=32)		df	χ^2	p
	f	%	f	%			
Good (7 - 10)	28	87.5	24	75.00	2	2.12	0.34
Moderate (4 - 6)	4	12.5	7	21.87			
Poor (0 - 3)	0	0	1	3.13			

Table 1 (a) depicts that majority of patients in control group (87.5%) and experimental group (75%) had good practice of personal hygiene. Chi square value of domains of health practices shows that there was no statistically significant difference between control and experimental group. Hence both groups were homogenous in terms of personal hygiene.

Table 1 (b): Frequency distribution and percentage of patients with haemophilia based on domain activity and exercise (n=64)

Activity and exercise	Control group (n=32)		Experimental Group (n=32)		df	χ^2	p
	f	**%**	**f**	**%**			
Good (11 - 16)	17	53.13	8	25.00	2	5.55	0.06
Moderate (6 - 10)	13	40.62	22	68.75			
Poor (0 - 5)	2	6.25	2	6.25			

Table 1 (b) depicts that more than half of patients in control group (53.13%) and experimental group (68.75%) had good and moderate practice in activity and exercise. Chi square value of domains of health practices shows that there was no statistically significant difference between control and experimental group. Hence both groups were homogenous in terms of activity and exercise.

Table 1 (c): Frequency distribution and percentage of patients with haemophilia based on domain prevention of complications, (n=64)

Prevention of complication	Control group (n=32)		Experimental group (n=32)		df	χ^2	p
	f	%	f	%			
Good (15 - 20)	23	71.88	23	71.88	2	2.25	0.32
Moderate (8 - 14)	9	28.12	7	21.87			
Poor (0 - 7)	0	0	2	6.25			

Table 1 (c) depicts that more than half of patients (71.88%) in both groups had good practice in prevention of complications. Chi square value of domains of health practices shows that there was no statistically significant difference between control and experimental group. Hence both groups were homogenous in terms of prevention of complications.

Table 1 (d): Frequency distribution and percentage of patients with haemophilia based on domain compliance to therapeutic regimen, (n=64)

Compliance to therapeutic regimen	Control group (n=32)		Experimental group (n=32)		df	$\chi 2$	p
	f	%	f	%			
Good (11 - 14)	22	68.75	21	65.62	2	0.08	0.96
Moderate (6 - 10)	9	28.12	10	31.25			
Poor (0 - 5)	1	3.13	1	3.13			

Table 1 (d) depicts that More than half of patients in control (68.75%) and experimental group (65.62%) had good compliance to therapeutic regimen. Chi square value of domains of health practices shows that there was no statistically significant difference between control and experimental group. Hence both groups were homogenous in terms of compliance to therapeutic regimen.

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H_{01}: There is no significant difference in health practices among patients with haemophilia between control group and experimental group

Table 2: Median and IQR of pretest and post test score of health practices among patients with haemophilia in control group and experimental group, (n=64)

Group	Health practices			
	Pretest		Post test	
	Median	IQR	Median	IQR
Control (n=32)	46.50	9.75	44.50	8.00
Experimental (n=32)	45.00	8.75	53.00	7.75

Table 2 depicts that the median of pretest and post test score of health practices in control group was 46.5 and 44.5 respectively. The median of pretest and post test scores in the experimental group was 45 and 53 respectively.

Table 3: Mean rank, sum of ranks and U value of post test score of health practices among patients with haemophilia in control group and experimental group, (n=64)

	Health practices		U	p
Group	Mean rank	Sum of ranks		
Control (n=32)	21.45	686.50	158.50	0.00
Experimental (n=32)	43.55	1393.50		

Table 3 shows that U value obtained for health practices among control and experimental group was 158.5, which was significant at 0.01 level. Hence null hypothesis is rejected and it can be interpreted that interventional package was effective on health practices among patients with haemophilia.

Table 5: Median and IQR of domains based on pretest and post test score of health practices among patients with haemophilia in control and experimental group, (n=64)

Table 5.1: Median and IQR of domain personal hygiene based on pretest and post test score of health practices among patients with haemophilia in control and experimental group

Group	Personal hygiene			
	Pretest		Post test	
	Median	IQR	Median	IQR
Control (n=32)	8.00	2.00	7.00	3.00
Experimental (n=32)	8.00	2.75	9.00	1.00

Table 5.1 depicts that the median of control group and experimental group in terms of pretest score in domain personal hygiene was 8 and 8 and IQR were 2 and 2.75 respectively. On the basis of post test score median of control and experimental group in domain personal hygiene were 7 and 9 whereas IQR were 3 and 1.

Table 5.2: Median and IQR of domain activity and exercise based on pretest and post test score of health practices among patients with haemophilia in control and experimental group

Group	Activity and exercise			
	Pretest		Post test	
	Median	IQR	Median	IQR
Control (n=32)	11.00	4.00	8.00	4.00
Experimental (n=32)	9.00	3.75	13.00	3.75

Table 5.2 depicts that the median of control group and experimental group in the domain activity and exercise were 11 and 9. The corresponding IQR in the same domain were 4 and 3.75 respectively. On the basis of post test score median of control and experimental group in domain activity and exercise were 8 and 13 and IQR were 4 and 3.75.

Table 5.3: Median and IQR of domain prevention of complications based on pretest and post test score of health practices among patients with haemophilia in control and experimental group

Group	Prevention of complications			
	Pretest		Post test	
	Median	IQR	Median	IQR
Control (n=32)	17.50	5.00	16.00	3.75
Experimental (n=32)	16.00	4.75	19.00	2.00

Table 5.3 depicts that the median of control group and experimental group based on pretest score in the domain prevention of complications were 17.5 and 16 and IQR were 5 and 4.75 respectively. On the basis of post test score median of control group and experimental group in the domain prevention of complication were 16 and 19. And the corresponding IQR were 3.75 and 2.

Table 5.4: Median and IQR of domain compliance to therapeutic regimen based on pretest and post test score of health practices among patients with haemophilia in control and experimental group

Group	Compliance to therapeutic regimen			
	Pretest		Post test	
	Median	IQR	Median	IQR
Control (n=32)	12.00	3.00	12.00	3.00
Experimental (n=32)	12.00	4.00	13.00	1.00

Table 5.4 depicts that the median of control group and experimental group were 17.5 and 16 and IQR were 5 and 4.75 respectively. In the domain compliance to therapeutic regimen median in the control and experimental group were 12 and 12. The corresponding IQR in the same domain were 3 and 4 respectively. On the basis of post test score median in the control and experimental group were 12 and 13. The corresponding IQR in the same domain were 3 and 1.

Table 6: Mean rank, sum of ranks and U value of post test score of domains of health practices among patients with haemophilia in control group and experimental group,

Table 6.1: Mean rank, sum of ranks and U value of post test score of domain personal hygiene among patients with haemophilia in control group and experimental group

Group	Personal hygiene		U	p
	Mean rank	Sum of ranks		
Control (n=32)	25.98	831.50	303.50	0.004
Experimental (n=32)	39.02	1248.50		

Table 6.1 reveals that the U value obtained for the domain's personal hygiene was 303.5, which was significant at 0.01 level. level. Hence null hypothesis is rejected and it can be interpreted that interventional package was effective in improving the practice of personal hygiene among patients with haemophilia.

Table 6.2: Mean rank, sum of ranks and U value of post test score of domain activity and exercise among patients with haemophilia in control group and experimental group

Group	Activity and exercise		U	p
	Mean rank	Sum of ranks		
Control (n=32)	22.27	712.50	184.50	0.000
Experimental (n=32)	42.73	1367.50		

Table 6.2 reveals that the U value obtained for the domain activity and exercise was 184.50, which was significant at 0.01 level. level. Hence null hypothesis is rejected and it can be interpreted that interventional package was effective in improving the practice of activity and exercise among patients with haemophilia.

Table 6.3: Mean rank, sum of ranks and U value of post test score of domain prevention of complications among patients with haemophilia in control group and experimental group

Group	Prevention of complications		U	p
	Mean rank	Sum of ranks		
Control (n=32)	24.31	778.00	250.00	0.000
Experimental (n=32)	40.69	1302.00		

Table 6.3 reveals that the U value obtained for the domain prevention of complications was 250, which was significant at 0.01 level. Hence null hypothesis is rejected and it can be interpreted that interventional package was effective in improving the practice of prevention of complications among patients with haemophilia.

Table 6.4: Mean rank, sum of ranks and U value of post test score of domain compliance to therapeutic regimen among patients with haemophilia in control group and experimental group

Group	Compliance to therapeutic regimen		U	p
	Mean rank	Sum of ranks		
Control (n=32)	29.73	951.50	423.50	0.224
Experimental (n=32)	35.27	1128.50		

Table 6.4 reveals that the U value obtained for the domain's compliance to therapeutic regimen was 423.50, which is not significant at 0.01 level. Hence null hypothesis is accepted and it can be interpreted that interventional package was not effective in improving the practice of compliance to therapeutic regimen among patients with haemophilia.

4. Conclusion

The findings of the present study suggested that interventional package was effective in improving health practices among patients with haemophilia. Also, the interventional package was effective in improving domains of health practices such as selfcare, activity and exercise and prevention of complications.

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