A STUDY TO ASSESS THE EFFECTIVENESS OF STOP CLOT INTERVENTION PACKAGE ON THE LEVELS OF KNOWLEDGE AND PRACTICES AMONG CARE GIVERS OF HIGH RISK PATIENTS TO DEVELOP DVT REGARDING PREVENTION OF DEEP VEIN THROMBOSIS (DVT) AT SRI NARAYANI HOSPITAL AND RESEARCH CENTRE (SNHRC), VELLORE.

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Abstract

Deep vein thrombosis (DVT) is a part of condition called venous thromboembolism. DVT occurs when a blood clot (thrombus) forms in one or more of the deep veins in the body, usually in the legs. DVT can cause leg pain or swelling, but may occur without any symptoms. DVT is a serious condition because blood clots in the veins can break loose, travel through the blood stream; obstruct the lungs and blocking the blood flow. So stop clot intervention package is very much important to prevent the DVT.

Methods: A quasi experimental one group pre- test and post-test design adopted in this study. Probability stratified random sampling technique used in this study to select 35 care givers of high risk patients to develop deep vein thrombosis at SNHRC, Vellore. The self-structured knowledge questionnaire and practice check lists were prepared to assess the knowledge and practice of the care givers. Descriptive and inferential statistics were used for analysis and interpretation of data.

Result and Interpretation

Findings of this study shows in pre intervention levels of the knowledge, out of 35 samples, 94.29 percent were inadequate, 5.71 percent were moderate adequate and none of them were in adequate levels of knowledge. Whereas in post intervention none of them were in inadequate, 42.86percentwere moderate adequate & 57.14percent were adequate levels of knowledge.

In pre and post intervention levels of practices, out of 35 samples, 60percent were poor competency, 40percent were fair competency and none of them were in good competency levels of practices. Whereas in post intervention in day- 1, none of them was poor competency, 2.86percent were fair competency and 97.14percent were good competency. In day-2 and day 3, none of them was poor & fair competency and 100percent were good competency levels of practices. In the knowledge pre intervention mean score was 8.50 & SD 2.92, whereas in post intervention means score was 20 and SD 1.93, mean difference 11.5 and paired 't' value was 21.62 (TV= 3.79) was significant at p< 0.001 level. Hypothesis was tested and accepted. In the practice pre intervention, mean score was 8.2 and SD 1; whereas in post intervention, day -1 mean score was 19.9, SD1.2, mean difference 12 & paired t value 4.95 (TV=3.75); day- 2 mean score was 20.14 & SD 1, mean difference 11.91 &paired t value 38.57 (TV=3.55); in day - 3 mean score was 20.4 & SD 1.2, mean difference 12.2 & paired 't' value 34.2l (TV=3.65). That was more significant at p<0.001 level. There are improvements in the knowledge and practices of the care givers of high risk patients to develop DVT. Hypothesis one was tested and accepted. The comparison of post intervention practices between day1 & day2 and between day2 & day3. In that between day 1 & day 2 mean differences 1.8, SD 0.56, paired t value 6.20 & table value 5.96. That was more significant at p<0.001 level. In between day 2 & day 3, mean difference 0.8, SD 0.04, t value 6.20 & table value 4.03. That was more significant at p< 0.01 level. In the 'Chi-square' values of selected demographic variables and post intervention score on levels of knowledge of the care givers of high risk patients to develop DVT. The 'Chi-square' values of selected demographic variables such as sex and previous knowledge regarding DVT were significant and age, educational status, occupation, income of the care giver & sources of information were non-significant. Hypothesis two was tested and accepted. In association between the post interventions levels of practices with selected demographic variables were non- significant. Hence an $H_2$was rejected.

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1. Introduction

Immobilization is to make immobile or immovable or fix in place and prevent the use, activity, or movement of the body parts. It is a state of being immobilized, quiet rest in bed for a prolonged period. Patients with obesity, cancer, smoking, estrogen use, advancing age, varicose veins, dehydration, splenectomy & orthopedic procedures, pregnancy and postpartum period are comes under the high risk in the immobilization and bed ridden and also to develop Deep Vein Thrombosis (DVT)(Public Health Report (2008). Immobility, surgery, hospitalization, pregnancy and puerperium, hormonal therapy, obesity, inherited and acquired hypercoagulable states, anesthesia, myocardial infarction, past history of DVT, varicose veins, infections, inflammatory bowel disease, and renal impairment are common risk factors for DVT. However, central line, sickle cell disease, severe infections and hypercoagulability states were suggested to be potential risk factors for DVT in children (Bo now et al - 2012). The precise number of people affected by DVT / PE is unknown, although as many as 900,000 people could be affected (one to two per 1,000) each year in the United States. Estimates suggested that 60,000 – 100,000 Americans die of DVT/PE (also called venous thromboembolism). Ten to 30 percent of people will die within one month of diagnosis. Sudden death is the first symptom in about one quarter two percent of people who have a PE. Among the people who have had a DVT, one third to one half will have long – term complications(post – thrombotic syndrome) such as swelling, pain, discoloration, and scaling in the affected limb, one third (about 33%) of people with DVT/ PE will have a recurrence within ten years. Approximately five to eight percent of the U.S population has one of several genetic risk factors, also known as inherited thrombophilia in which a genetic defect can be identified that the risk for thrombosis. (CDC – February 7, 2020). Even though Indians may be at an equal risk, the exact incidence of DVT is not known for the India n populations. There are only a handful of studies, mainly orthopedic, in which the rate of varies from 3.7 to 17 percent. (Neurology India, Tushar D Borde, Chandrajit July 5, 2017).

Background of the Study

According to Jonathan Stone et all - 2017 Dec, Deep vein thrombosis (DVT) is a major preventable cause of morbidity and mortality worldwide. Venous thromboembolism (VTE), which includes DVT and pulmonary embolism (PE), affects an estimated one per 1,000 people and contributes to 60,000–100,000 deaths annually.

According to CDC (centers for disease control – February 7, 2020 the precise number of people affected by DVT/PE is unknown, although as many as 900,000 people could be affected (1 to 2 per 1,000) each year in the United States. Estimates suggest that 60,000-100,000 Americans die of DVT/PE (also called venous thromboembolism). Ten to 30 percent of people will die within one month of diagnosis. Sudden death is the first symptom in about one-quarter (25%) of people who have a PE. Among people who have had a DVT, one third to one half will have long-term complications (post-thrombotic syndrome) such as swelling, pain, discoloration, and scaling in the affected limb. One-third (about 33%) of people with DVT/PE will have a recurrence within ten years. Researcher found that the knowledge and practices on prevention of DVT is not adequate among the care givers of high-risk patients to develop DVT during the survey period. And many literatures insist that teaching and demonstration are the best way to improve the knowledge and practices of the care givers regarding prevention of DVT. Sinceliteratures reveal that the care giver's role in DVT prevention is very vital. This prompted the researcher to undertake a study to assess the effectiveness of stop clot intervention package on the levels of knowledge and practices among care givers of high-risk patients regarding prevention of Deep Vein Thrombosis (DVT).

Statement of the Problem

A study to assess the effectiveness of stop clot intervention package on the levels of knowledge and practices among care givers of high risk patients to develop DVT regarding prevention of Deep Vein Thrombosis (DVT) at Sri Narayani Hospital and Research Centre (SNHRC), Vellore.

Objective

- To assess the pre and posttest levels of knowledge and practices among care givers of high risk patients regarding prevention of deep vein thrombosis at SNHRC, Vellore.

- To assess the effectiveness of stop clot intervention package on levels of knowledge and practices among care givers of high risk patients regarding prevention of deep vein thrombosis at SNHRC, Vellore.
- To find an association between the posttest levels of knowledge and practices among the care givers of high risk patients and selected demographic variables.

Hypotheses

- H_1: There is a significant difference between pretest and posttest levels of knowledge and practices among care givers of high risk patients regarding prevention of deep vein thrombosis.
- H_2: There is a significant association between the posttest levels of knowledge and practices among care givers of high risk patients and selected demographic variables.

2. Research Methodology

A quasi experimental one group pre- test and post-test design adopted in this study. Probability stratified random sampling technique used in this study to select 35 care givers of high risk patients to develop deep vein thrombosis at SNHRC, Vellore. The self-structured knowledge questionnaire and practice check lists were prepared to assess the knowledge and practice of the care givers. Descriptive and inferential statistics were used for analysis and interpretation of data.

3. Results

Frequency and percentage distribution of selected demographic variables of care givers of high risk patients to develop DVT

			n= 35
SL.NO	**DEMOGRAPHIC VARIABLES**	**FREQUENCY (f)**	**PERCENTAGE (%)**
1	**Age (years)**		
1.1	19 – 30	6	17.14
1.2	31 – 55	14	40.00
1.3	46 – 60	14	40.00
1.4	61 & above 61	1	2.86
2	**Sex**		
2.1	Male	17	48.57
2.2	Female	18	51.43
3	**Educational Status**		
3.1	Professional Degree	1	2.86
3.2	Graduate	4	11.43
3.3	Intermediate / Diploma	10	28.57
3.4	High School	12	34.29
3.5	Middle School	8	22.86
4	**Occupation**		
4.1	Professional	4	11.43
4.2	Semi Professional	3	8.57
4.3	Clerical / Shop / Farms	4	11.43
4.4	Skilled Worker	8	22.86
4.5	Un Skilled Worker	4	11.43
4.6	Unemployed	12	34.29
5	**Monthly Income (in Rupees)**		
5.1	Less than 5000	8	22.86

5.2	5001 to 10000	8	22.86
5.3	10001 to 15000	14	40.00
5.4	15001 to 20000	5	14.29
6	**Previous Knowledge regarding DVT**		
6.1	Yes	6	17.14
6.2	No	29	82.86
6.1	**Source of information**		
6.1.1	Doctors	1	2.86
6.1.2	Nurses	1	2.86
6.1.3	Relatives	2	5.71
6.1.4	Friends	2	5.71

Frequency and percentage distribution of pre and post intervention levels of knowledge of care givers of high risk patients to develop DVT. n=35

SL.NO	LEVELS OF KNOWLEDGE	PRE INTERVENTION		POST INTERVENTION	
		FREQUENY (f)	PERCENTGE (%)	FREQUENY (f)	PERCENTAGE (%)
1	Inadequate	33	94.29	0	0.00
2	Moderate Adequate	2	5.71	15	42.86
3	Adequate	0	0.00	20	57.14

Findings of the pre intervention levels of knowledge, out of 35 samples, 94.29 percent were inadequate, 5.71percent were moderate adequate and none of themwas in adequate. Whereas in post intervention result shows none of them was inadequate, 42.86percentwere moderate adequate & 57.14percentwere adequate knowledge. Hypothesis one was tested and accepted.

Frequency and percentage distribution of pre and post intervention levels of practices of care givers of high risk patients to develop DVT. n =35

S. NO	LEVELS OF PRACTICE	PRE INTERVENTION		POST INTERVENTION					
				DAY 1		DAY 2		DAY 3	
		FREQUENCY (f)	PERCENTAGE (%)	FREQUENCY(f)	PERCENTAGE(%)	FREQUENCY(f)	PERCENTAGE(%)	FREQUENCY(f)	PERCENTAGE(%)
1	Poor competency	21	60.00	0	0.00	0	0.00	0	0.00
2	Fair Competency	14	40.00	1	2.86	0	0.00	0	0.00
3	Good Competency	0	0.00	34	97.14	35	100.00	35	100.00

Pre intervention levels of practices, out of 35 samples, 60 percent were poor competency, 40percent were fair competency and none of them was good competency. Whereas post intervention result shows in day- 1, none of them was poor competency, 2.86percent were fair competency and 97.14percent were good competency. In day-2 and day 3, none of them was poor & fair competency and 100percent were good. Hypothesis one was tested and accepted

Effectiveness of pre and post intervention levels of knowledge and Mean, Standard Deviation, Mean Difference and 't' Values n= 35

SL.NO	Group	PRE INTERVENTION		POST INTERVENTION DAY 3		Mean Difference	t value
		Mean	SD	Mean	SD		
1	Knowledge	8.5	2.92	20	1.93	11.5	21.62***
							TV= 3.79

In this study knowledge pre intervention mean score was 8.50 & SD 2.92, whereas in post intervention means score was 20 and SD 1.93, mean difference 11.5 and paired't' value was 21.62 was significant at $p<0.01$ level.

Effectiveness of pre and post intervention levels of practices Mean, Standard Deviation, Mean Difference and 't' Values n=35

SL.NO	PRACTICES	PRE INTREVENTION	POST INTERVENTION		
			DAY 1	DAY 2	DAY 3
1	Mean	8.20	19.9	20.14	20.20
2	SD	1.00	1.20	1.00	1.20
3	Mean difference		12.00	11.91	12.20
4	t value		24.95***	38.57***	34.21***
5	TV		3.75	3.55	3.65

Comparison of post intervention practices between day1 & day2 and between day2 & day3 n=35

SL.NO	PRACTICE	BETWEEN DAY1 & DAY 2	BETWEEN DAY 2 & DAY 3
1	Mean difference	1.08	0.8
2	SD	0.56	0.04
4	t value	6.20***	5.42**
5	Table value	5.96	4.03

Comparison of post intervention practices between day1 & day2 and between day2 & day3. In that between day1 & day2 mean differences 1.8, SD 0.56, paired 't' value 6.20 & table value 5.96. That

was more significant at p<0.001 level. In between day2 & day3, mean difference 0.8, SD 0.04, paired t value 6.20 & table value 4.03. That was more significant at p< 0.01 level.

Association between post intervention levels of knowledge with selected demographic variables of the care givers of high risk patients to develop DVT n= 35

S.NO	DEMOGRAPHIC VARIABLES	LEVELS OF KNOWLEDGE						Chi-Square value
		INADEQUATE		MODERATE ADEQUATE		ADEQUATE		$\chi 2$
		f	%	f	%	F	%	
1	**Age (years)**							
1.1	19 – 30	0	0	3	8.57	3	8.57	$\chi 2$ =0.956 Df=6 TV=12.59 NS
1.2	31 – 55	0	0	6	17.14	8	22.86	
1.3	46 – 60	0	0	6	17.14	8	22.86	
1.4	61 & above 61	0	0	0	0	1	2.86	
2	**Sex**							
2.1	Male	0	0	7	20	10	28.57	$\chi 2$ =13.787 Df=2 TV=5.99 S*
2.2	Female	0	0	8	22.86	10	28.57	
3	**Educational Status**							
3.1	Professional Degree	0	0	0	0	1	2.86	$\chi 2$ =6.889 Df=8 TV=15.51 NS
3.2	Graduate	0	0	2	5.71	2	5.71	
3.3	Intermediate / Diploma	0	0	6	17.14	14	40	
3.4	High School	0	0	2	5.71	10	28.57	
3.5	Middle School	0	0	5	14.29	3	8.57	
4	**Occupation**							
4.1	Professional	0	0	3	8.57	1	2.86	$\chi 2$ =2.489 Df=10 TV=18.31 NS
4.2	Semi Professional	0	0	1	2.86	2	5.71	
4.3	Clerical / Shop / Farms	0	0	2	5.71	2	5.71	
4.4	Skilled Worker	0	0	3	8.57	5	14.29	
4.5	Un Skilled Worker	0	0	1	2.86	3	8.57	
4.6	Unemployed	0	0	5	14.29	7	20	
5	**Monthly Income (in Rupees)**							
5.1	Less than 5000	0	0	3	8.57	5	14.29	$\chi 2$ = 0.817 Df=6 TV=12.59 NS
5.2	5001 to 10000	0	0	3	8.57	5	14.29	
5.3	10001 to 15000	0	0	6	17.14	8	22.86	
5.4	15001 to 20000	0	0	3	8.57	2	5.71	
6	**Previous Knowledge regarding DVT**							
6.1	Yes	0	0	3	8.57	3	8.57	$\chi 2$ =0.174 Df=2 TV=5.99 S*
6.2	No	0	0	12	34.29	17	48.57	
6.1	**Source of information**							

6.1.1	Doctors	0	0	0	0	1	2.86	χ^2 =4 Df=6 TV=12.59 NS
6.1.2	Nurses	0	0	0	0	1	2.86	
6.1.3	Relatives	0	0	1	2.86	1	2.86	
6.1.4	Friends	0	0	2	5.71	0	0	

Study finding shows that the 'Chi-square' values of selected demographic variables and post intervention score on levels of knowledge of the care givers of high risk patients to develop DVT. The 'Chi-square' values of selected demographic variables such as sex and previous knowledge regarding DVT were significant and age, educational status, occupation, income of the care giver & sources of information were non-significant. There was a significant association between the post-test levels of knowledge Hypothesis two was tested & accepted. Whereas in the practices there is no association between the post-test levels practices and selected demographic variables of the care givers of high risk patients. Hypothesis two was tested & rejected.

4. Discussion

Findings of the pre intervention levels of knowledge, out of 35 samples, 94.29 percent were inadequate, 5.71percent were moderate adequate and none of themwas in adequate. Whereas in post intervention result shows none of them was inadequate, 42.86percentwere moderate adequate & 57.14percentwere adequate knowledge. Hypothesis one was tested and accepted.

To assess the pre and post-test levels of knowledge and practices among care givers of high risk patients regarding prevention of deep vein thrombosis

Pre intervention levels of practices, out of 35 samples, 60 percent were poor competency, 40percent were fair competency and none of them was good competency. Whereas post intervention result shows in day- 1, none of them was poor competency, 2.86percent were fair competency and 97.14percent were good competency. In day-2 and day 3, none of them was poor & fair competency and 100percent were good. Hypothesis one was tested and accepted.

To assess the effectiveness of stop clot intervention package on levels of knowledge and practices among care givers of high risk patients regarding prevention of deep vein thrombosis

In this study knowledge pre intervention mean score was 8.50 & SD 2.92, whereas in post intervention means score was 20 and SD 1.93, mean difference 11.5 and paired't' value was 21.62 was significant at $p<0.01$ level. In the practice pre intervention, mean score was 8.2 and SD 1; whereas in post-test, day -1 mean score was 19.9, SD1.2, mean difference 12 & paired't'value 4.95 (TV=3.75); day- 2 mean score was 20.14 & SD 1, mean difference 11.91 & paired't' value 38.57 (TV=3.55); in day - 3 mean score was 20.4 & SD 1.2, mean difference 12.2 & paired't'value 34.2l (TV=3.65). It was significant at $p<0.001$ level. The result revealed that the levels knowledge and practices of the care givers of high risk patients to develop DVT were significantly increased. Comparison of post intervention practices between day1 & day2 and between day2 & day3. In that between day1 & day2 mean differences 1.8, SD 0.56, paired 't' value 6.20 & table value 5.96. That was more significant at $p<0.001$ level. In between day2 & day3, mean difference 0.8, SD 0.04, paired t value 6.20 & table value 4.03. That was more significant at $p< 0.01$ level.

To find an association between the post-test levels of knowledge and practices among the care givers of high risk patients and selected demographic variables.

Study finding shows that the 'Chi-square' values of selected demographic variables and post intervention score on levels of knowledge of the care givers of high risk patients to develop DVT. The 'Chi-square' values of selected demographic variables such as sex and previous knowledge regarding DVT were significant and age, educational status, occupation, income of the care giver & sources of information were non-significant. There was a significant association between the post-test levels of knowledge Hypothesis two was tested & accepted. Whereas in the practices there is no association between the post-test levels practices and selected demographic variables of the care givers of high risk patients. Hypothesis two was tested & rejected.

5. Conclusion

This study shows that the post intervention levels knowledge and practices of the care givers of high risk patients to develop DVT was increased after the stop clot intervention package regarding prevention of DVT.

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