Effect of Self-Instructional Manual (SIM) on Management of Inotropic Drugs Among Health Care Workers Serving in Selected Tertiary Care Hospitals, Maharashtra

Ms. Sanvedana Vinaji Nikure[1], Mr. Prabhudas Raiborde[2]
[1]*M.Sc. Nursing Ii Year, Dr Panjabrao Deshmukh Nursing Institute Amravati*
[2]*Professor Cum Vice Principal, Dr Panjabrao Deshmukh Nursing Institute Amravati*

Abstract Cardiovascular diseases are a group of disorders of heart and blood vessels and include coronary heart disease, congenital heart disease, deep vein thrombosis and pulmonary embolism. Heart attacks are usually acute events and are mainly caused by a blockage that prevents blood from flowing to the heart. Cardiovascular diseases are the leading cause of death which claims 17.5 million deaths annually. Health care workers working in ICU are liable for directing inotropic drug that influences the patients cardiac functioning. They should know appropriate diluents of every medication and master in dose calculation to prevent administration errors.[10] They should be aware of the indication, mechanism of action, contraindications, and adverse reactions interactions of drugs. Also, they screen the patients for any negative indications and build up the nursing care plan to provide care to patients. While working it has been observed during the experience in practice that health care workers should have very attentive and alert at the time of administering inotropic drugs. It was also found that many of the health care workers were administering drugs by procedures. The proper planning and management of administering drugs certainly improve an effective among the patients therefore in view of effectiveness in management of inotropic drugs surely assist the health care workers. So based on this I was inspired to conduct this study. OBJECTIVES OF THE STUDY The Primary Objective was to find out the effect of SIM on management of inotropic drugs among health care workers serving in tertiary care hospitals, Maharashtra Secondary Objectives To assess the knowledge of health care workers on management of inotropic drugs before intervention in experimental and Control group. To find out the effect of SIM on management of inotropic drugs among health care workers after intervention in experimental and control group. To find out the association between post-test knowledge scores and selected demographic variables of health care workers in experimental group. A quasi-experimental with non-randomized control group design was used to find out the effect of self-instructional manual on management of inotropic drugs among conveniently selected 160 health care workers (control-80 & experimental group-80) serving in selected tertiary care hospitals, Maharashtra. RESULT From the findings, it was observed that the pre-intervention demographic variables of health care workers in control and experimental group were more or less similar revealing both the groups had common characteristics. It was observed that the percentages of knowledge (control group; 52.70% & experimental group; 49.80%) had average knowledge, on management of inotropic drugs among health care workers were more or less similar before intervention. However, after an intervention, the percentage of knowledge and themean scores of health care workers were significantly increased in experimental group whereas it was remained unchanged in control group. There was a significant difference between pretest and post-test knowledge scores in experimental group. And, there was also a significant difference between the post tests of control and experimental group. However, after an intervention, the overall percentage of knowledge on management of inotropic drugs was increased from 14.59% to 21.79% in experimental group. However, during pre-test the level ofvery good knowledge was 1.3% whereas it was significantly increased to 5.1% during post-test in experimental group. Prior to intervention, 42 nurses had average knowledge (52.7%) whereas only 4 nurses remained in the post-test with average knowledge (5.1%). However, the knowledge was almost remained unchanged in control group. There was a significant difference ($p<0.0001$) between pre-test and post-test knowledge scores in experimental group. And, there was also a significant difference ($p<0.0001$) between the post tests of control and experimental group. No significant

association (p>0.05) was found between knowledge on management of inotropic drugs and age, gender, professional qualification, total work experience, & source of information of health care workers. CONCLUSION Findings of study revealed that SIM on management of inotropic drugs was effective among health care workers serving in selected tertiary care hospitals, Maharashtra

INTRODUCTION

Nowadays we are observing there are enough number of cardiovascular patients and also day by day their ratio is getting increased at huge number because cardiovascular diseases are the number one cause of death globally. Cardiovascular diseases are a group of disorders of the heart and blood vessels and include coronary heart disease and other conditions. Four out of five deaths are due to heart attacks and strokes and one third of these deaths occur prematurely in people under 70 years of age. Health care workers need to have deep understanding of inotropes which is important for safe and effective care delivery. These highly potent medication can result in adverse events for patients if there is lack of health care worker performance regarding their use so the health care worker has the responsibility to acquire a high level of knowledge on indications for inotropes and their effects if high quality patient care is needed to be achieved.[5] Common inotropes used in ICU are Dopamine, Dobutamine, Adrenaline, Noradrenaline, digoxin and Milirinone. Cardiovascular diseases are a group of disorders of heart and blood vessels and include coronary heart disease, congenital heart disease, deep vein thrombosis and pulmonary embolism. Heart attacks are usually acute events and are mainly caused by a blockage that prevents blood from flowing to the heart. Cardiovascular diseases are the leading cause of death which claims 17.5 million deaths annually. drug.While working it has been observed during the experience in practice that health care workers should have very attentive and alert at the time of administering inotropic drugs. It was also found that many of the health care workers were administering drugs by procedures. The proper planning and management of administering drugs certainly improve an effective among the patients therefore in view of effectiveness in management of inotropic drugs surely assist the health care workers. So based on this I was inspired to conduct this study.

OBJECTIVES OF THE STUDY

The Primary Objective was to find out the effect of SIM on management of inotropic drugs among health care workers serving in tertiary care hospitals, Maharashtra.

Secondary Objectives

1. To assess the knowledge of health care workers on management of inotropic drugs before intervention in experimental and Control group.
2. To find out the effect of SIM on management of inotropic drugs among health care workers after intervention in experimental and control group.
3. To find out the association between post-test knowledge scores and selected demographic variables of health care workers in experimental group.

MATERIALS AND METHOD

A quasi-experimental with non- randomized control group design was used to find out the effect of self-instructional manual on management of inotropic drugs among conveniently selected 160 health care workers (control-80 & experimental group-80) serving in selected tertiary care hospitals, Maharashtra. To collect data on demographic variables & management of inotropic drugs self-administered questionnaire was used among health care workers in control & experimental group before and after an intervention. After a pre-test, self-instructional manual was used to teach on management of inotropic drugs among 80 health care workers of experimental group whereas no such deliberation was made in control group. However, after one week, the post test was conducted among health care workers in control & experimental group to assess the effect of self-instructional manual on management of inotropic drugs. From the findings, it was observed that the pre-intervention demographic variables of health care workers in control and experimental group were more or less similar revealing both the groups had common characteristics.

RESULT

SECTION I

Distribution of health care workers according to their demographic variables in experimental and control group

n=160

Sr. No.	Demographic Variables	Control Group		Experimental Group	
		Frequency	Percentage	Frequency	Percentage
1.	Age (years)				
	21-30 Year	40	50.0%	45	56.3%
	31-40 year	34	42.5%	29	36.3%
	41-50 year	6	7.5%	6	7.5%
	50 years and above	0	0%	0	0%
2.	Gender				
	male	22	27.5%	19	23.8%
	female	58	72.5%	61	76.3%
	Others	0	0%	0	0%
3.	Professional Qualification				
	doctor	5	6.3%	7	8.8%
	Staff Nurse	69	86.3%	63	78.8%
	Pharmacist	3	3.8%	7	8.8%
	paramedical Staff	3	3.8%	3	3.8%
	Others	0	0%	0	0%
4.	Work Experience				
	01-5 years	50	62.5%	45	56.3%
	06-10 years	23	28.7%	27	33.8%
	11-15 years	7	8.8%	8	10.0%
	16 years & above	0	0%	0	0%
5.	Source of information				
	In service training	37	46.3%	36	45%
	Workshop/conference	39	48.8%	34	42.5%
	Books/Journals	4	5.0%	10	12.5%
	Any other source	0	0%	0	0%

SECTION-II

Assessment of knowledge on management of inotropic drugs among health care workers before intervention in experimental and control group.

Sr. No.	Level of knowledge	Controlled Group		Experimental Group	
		n	%	*n*	%
1.	Very good	1	1.3%	0	0%
2.	Good	31	38.4%	14	17.7%
3.	Average	42	52.7%	40	49.8%
4.	Poor	6	7.6%	26	32.5%
5.	Very poor	0	0%	0	0%
	Total	80	100%	80	100%

Mean & Standard deviation of knowledge score on management of inotropic drugs among health care workers before intervention in experimental and control group

Sr.No	Level of knowledge	Score range	Level of Pre-test knowledge score	
			Control Group	Experimental Group
1.	Very good	25- 30	1(1.3%)	0(0%)
2.	Good	19-24	32(38.4%)	14(17.7%)
3.	Average	13-18	42(52.7%)	40(49.8%)
4.	Poor	07-12	6(7.6%)	26(32.5%)
5.	Very poor	06 & below	0(0%)	0%

6.	Overall standard deviation	3.615	4.031
Minimum score		7	7
Maximum score		26	24
Mean knowledge score		17.30±6.05	14.59±4.03

SECTION-III

Assessment of knowledge on management of inotropic drugs among health care workers after intervention in experimental and control group.

Sr. No.	Level of knowledge	Experimental Group		Control Group	
		n	%	*n*	%
1.	Very good	4	5.1%	0	0%
2.	Good	72	89.8%	53	66.1%
3.	Average	4	5.1%	17	21.4%
4.	Poor	0	0%	10	12.5%
5.	Very poor	0	0%	0	0%
	Total	80	100%	80	100%

Mean & Standard deviation of knowledge score on management of inotropic drugs among health care workers after intervention in experimental and control group

n =160

Sr.No	Level of knowledge	Score range	Level of Post-test knowledge score	
			Experimental Group	Control Group
1	Very good	25- 30	4(5.1%)	0(0%)
2	Good	19-24	72(89.8%)	53(66.1%)
3	Average	13-18	4(5.1%)	17(21.4%)
4	Poor	07-12	0(0%)	10(12.5%)
5	Very poor	06 & below	0(0%)	0(0%)
6	Overall standard deviation		1.96	4.44
Minimum score			15	7
Maximum score			27	24
Mean knowledge score			21.79	18.49

Assessment of knowledge on management of inotropic drugs among health care workers after intervention in experimental and control group.

Area of knowledge	Number of items	Knowledge in %	
		Experimental group	Control group
General description on inotropic drugs.	05	7.1%	9.6%
Indications and categories of inotropic drugs	05	9.6%	11.4%
Administration and management of inotropic drugs.	15	33.5%	28.5%
Roles and responsibility of health care workers during administration of inotropic drugs.	05	12.1%	10.1%
	30	62.3%	59.6%

Area wise Mean & Standard deviation of knowledge on management of inotropic drugs among health care workers After intervention in experimental and control group

Area of knowledge	Number of items	Experimental group	Control group
		Mean ± SD	Mean ± SD
General description on inotropic drugs.	05	0.85±0.355	0.78±0.51
Indications and categories of inotropic drugs	05	0.71±0.44	0.81±0.33
Administration and management of inotropic drugs.	15	0.35±0.11	0.48±0.22
Roles and responsibility of health care workers during administration of inotropic drugs.	05	0.33±0.9	0.77±0.41

SECTION IV Significant difference in the post test knowledge scores on selected knowledge on management of inotropic drugs among health care workers before and after intervention in experimental and control group

Paired samples statistics					
		Mean	N	Std. Deviation	Std. Error mean
Pair 1	Pretest controlled group	17.30	80	3.651	.408
	Post test-controlled group	18.49	80	4.444	.497
Pair 2	Pretest experimental group	14.59	80	4.031	.451
	Post test experimental group	21.79	80	1.960	.219

Significant difference between pre-test and post-test knowledge score on selected knowledge on management of inotropic drugs among health care workers

Paired samples statistics				
	Mean	N	Std. Deviation	Std. Error mean
Post test-experimental group	21.79	80	1.960	.219
Post test-controlled group	18.49	80	4.444	.497

Paired samples test							
	Paired differences				t	df	Sig. (2-tailed)
	Mean	Std. Deviation	95% confidence interval of the difference				
			Lower	Upper			
Pretest controlled group - posttest controlled group	-4.488	4.438	-5.475	-3.500	-9.044	79	0.0001 P<0.05
Pretest experimental group - posttest experimental group	-3.900	6.012	-5.238	-2.562	-5.802	79	0.000 P<0.05

Paired Samples Test								
posttest controlled group /experimental group	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
	3.300	4.939	.552	2.201	4.399	5.97	79	0.000 P<0.05

SECTION V

Association between post-test knowledge score and demographic variables of health care workers in experimental

Association between post-test knowledge score and age in years

ANOVA					
Post-test level of knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.621	2	0.811	2.055	0.135
Within Groups	30.366	77	0.394		
Total	31.987	79			

Association between post-test knowledge score and gender

ANOVA					
Post-test level of knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.815	2	0.408	2.296	0.107
Within Groups	13.672	77	0.394		
Total	14.487	79			

Association between post-test knowledge score and professional qualification

ANOVA
Post-test level of knowledge

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.388	2	0.194	0.594	0.555
Within Groups	25.162	77	0.327		
Total	25.550	79			

Association between post-test knowledge score and total work experience

ANOVA					
Post-test level of knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.613	2	0.306	0.669	0.515
Within Groups	35.275	77	0.458		
Total	35.888	79			

Association between post-test knowledge score and source of information.

ANOVA					
Post-test level of knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.181	2	0.090	0.186	0.830
Within Groups	37.369	77	0.485		
Total	37.550	79			

CONCLUSION

From the findings, it was observed that the pre-intervention demographic variables of health care workers in control and experimental group were more or less similar revealing both the groups had common characteristics. It was observed that the percentages of knowledge (control group; 52.70% & experimental group; 49.80%) had average knowledge, on management of inotropic drugs among health care workers were more or less similar before intervention. However, after an intervention, the overall percentage of knowledge on management of inotropic drugs was increased from 14.59% to 21.79% in experimental group. However, during pre-test the level ofvery good knowledge was 1.3% whereas it was significantly increased to 5.1% during post-test in experimental group. Prior to intervention, 42 nurses had average knowledge (52.7%) whereas only 4 nurses remained in the post-test with average knowledge (5.1%). However, the knowledge was almost remained unchanged in control group. There was a significant difference ($p<0.0001$) between pre-test and post-test knowledge scores in experimental group. And, there was also a significant difference ($p<0.0001$) between the post tests of control and experimental group. No significant association ($p>0.05$) was found between knowledge on management of inotropic drugs and age, gender, professional qualification, total work experience, & source of information of health care workers. Findings of study revealed that SIM on management of inotropic drugs was effective among health care workers serving in selected tertiary care hospitals, Maharashtra.

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