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RESEARCH ARTICLE

PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING THE ADMINISTRATION OF SELECTED INOTROPIC DRUGS AMONG THE STAFF NURSES IN SELECTED HOSPITAL KASHMIR"

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Abstract

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, taking an estimated 17.9 million lives each year. 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. Individual at risk may demonstrate raised blood pressure, glucose, and lipids as well as overweight and obesity. These can all be easily measured in primary care facilities. Identifying those at high risk of cardiovascular diseases and ensuring they receive appropriate treatment and can prevent premature deaths. For those conditions inotropic drugs play a vital role in rehablitating the cardiovascular disease patients. Inotropic state is most commonly used in reference to various drugs that affect the strength of contraction of heart muscle. Inotropic drugs are the medicines that change the force of hearts contractions. There are two kinds of inotropes namely positive which strengthen the force of heart beat and negative inotropes which weaken the force of heartbeat. So inotropic drugs are the commonly drugs used to treat cardiovascular conditions. Therefore in view of this pre-experimental one group pre-test post-test research design study was conducted to as assess the effectiveness of a structured teaching program on knowledge regarding the administration of inotropic drugs among the staff nurses in selected hospital of Kashmir for which 60 subjects were selected by simple random sampling technique. After data collection structured knowledge questionnaire was used to assess the knowledge among subjects. The data was analyzed by descriptive and inferential statistics by using chi-square and t-test. The findings revealed that in posttest majority of the study subjects **6(10%)** had excellent knowledge, **53(88.3%)** had good knowledge, **1(1.7%)** had average and none had below average knowledge with posttest mean score **26.15** standard deviation **3.019** with mean percentage **63.78** and mean difference **12.97**. Study concludes that null hypothesis was rejected because there was gain in knowledge among staff nurses after imparting structured

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teaching programme. The study also concluded that null hypothesis was accepted because there was statistically no significant association between selected variable (professional qualification, working experience, place of posting, and in-service education programme attended) at p> 0.001 of staff nurses with their pre-test knowledge scores at 0.05 level of significance.

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Introduction:-

A drug broadly speaking is any substance that is absorbed in to the body of a living organism, alters normal bodily function. A drug is a "chemical substance used in the treatment, cure, prevention, or diagnosis of disease or used to otherwise enhance physical or mental well-being. Drugs may be prescribed for a limited duration, or on a regular basis for chronic disorders and diseases of all systems[1]. Inotropic drugs are used for treatment of heart diseases for a long period of time or to treat emergency cardiac conditions. Some inotropic drugs have been used for more than two hundred years, however the use of some of these drug preparations has recently become controversial because they have never been shown to reduce mortality rates, but they do seem to offer some benefits in moderate to severe cardiac issues by reducing the period of hospitalization and symptoms. But today we have new generation inotropic drugs which are successful in therapeutic use [2].

Inotropes are one of the main drugs which are used for cardiac conditions. For decades inotropic drugs are used for treatment of heart disease, although knowledge of nurses, about these drugs is very low .The inotropic drugs have lot of immediate effects and side effects. So close observation of patient is important while administrating it. Some adverse effects of these drugs are fatigue, nausea, vomiting, bradycardia, cardiac arrhythmias, abdominal pain, dysrhythmias, photophobia etc. Wrong administration of these drugs even may cause sudden cardiac arrest, so good knowledge about inotropic drugs is very essential for staff nurses. An inotrope is an agent that alters the force or energy of muscular contractions. Negatively inotropic agents weaken the force of muscular contractions. Positively inotropic agents increase the strength of muscular contraction[3]. Both positive and negative inotropes are used in the management of various cardiovascular conditions. The choice of agent largely depends on specific pharmacological effects of individual agents with respect to the condition[4]. Some cardiac conditions like Congestive cardiac failure, Right heart failure, Myocardial infarction etc., and cardiac surgeries like cardio pulmonary bypass, angioplasty, valvuloplasty etc. are some cardiac emergencies where inotropes are in use.[5]

Inotropes play an important role in avoiding cardiogenic shock and are commonly given to patients with ventricular dysfunction. The compensative mechanism itself increases the workload of the heart and they are limited to extend and duration. In this condition drug therapy is aimed to improve cardiac output by using inotropes and other supportive measures. Intravenous positive inotropic drugs are indicated when patients with acute systolic heart failure exhibit signs or symptoms of end organ dysfunction due to hypo-perfusion[6].Common inotropes used in ICU are Dopamine, Dobutamine, Adrenaline, Noradrenaline, Isoprenaline and Milirinone[7].

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[8].

It is estimated that by 2020, cardiovascular diseases will be the largest cause of disability and death in India. The country already has more than 118 million people with hypertension, which is expected to increase to 213 million by 2025 unless urgent preventive steps are taken[9].

Wrong administration of drug is common in clinical practice, important reason being (1) lack of knowledge about drugs (2) unethical drug promotions and (3) Irrational prescribing habits by clinicians. The knowledge about the use and risk factors of inotropic drugs will be useful in increasing the role and responsibility of staff nurses in caring those patients under support of inotropic drugs and in providing for more timely therapeutic intervention and optimizing the care in future. [10, 11]

Hsiao, et al conducted a Cross sectional study in 2009 in Taiwan using a questionnaire about the development and validation of an instrument to measure nurse's knowledge of cardiac medications and to analyze known administration errors. Snowball sampling and descriptive statistics were used. A total of 305 nurses participated, giving a 79·2% response rate. Only 3·6% of nurses considered themselves to have sufficient knowledge about cardiac medications, 84·6% hoped to gain more training, and the leading obstacle reported was insufficient knowledge (75·4%). A total of 184 known administration errors were identified, including wrong drug (33·7%) and wrong dose (32·6%). Evidence-based results strongly suggested that nurses have insufficient knowledge about cardiac medications and could benefit from additional education, particularly associated with intravenous bolus administration of cardiac medications[12].

Hajebi, et al Conducted a study to determine the knowledge, attitude and practice of nurses towards pharmacovigilance in the taleqani medical teaching and treatment Centre in Tehran before and after an adverse drug reaction education programme. This study was conducted using a questionnaire. According to the statistical result the knowledge of nurses before the seminar was significantly less than the knowledge after the seminar (P= 0.0001). Based on the results of this study, it is necessary to conduct continuous adverse drug reaction educational programme until voluntary monitoring of adverse drug reaction become conventional and habitual among nursing staff[13].

From the above findings, it was found that inotropic drugs are commonly used in cardiovascular and medical surgical treatment. The nurses working in this area must possess adequate knowledge regarding inotropic drugs as well as the assessment and care of cardiovascular patients during the treatment in order to reduce the complications. Nurses play very important role in caring the patients by applying adequate knowledge and skill during the medical and cardiac emergencies in the hospitals. Nurses usually spend most of the time with patients. So the researcher felt that there is need to impart knowledge regarding inotropic drugs and decided to administer structured teaching programme among staff nurses regarding inotropic drugs in selected hospital of Kashmir.

Objectives Of The Study:-

1. To assess the pre-interventional knowledge score regarding the administration of selected inotropic drugs among the staff nurses in a selected hospital of Kashmir.
2. To assess the post-interventional knowledge score regarding the administration of selected inotropic drugs among the staff nurses in a selected hospital of Kashmir.
3. To assess the effectiveness of Structured Teaching Program by comparing pre-interventional & post-interventional knowledge scores regarding the administration of selected inotropic drugs among the staff nurses in a selected hospital of Kashmir.
4. To associate the pre-test knowledge scores regarding the administration of selected inotropic drugs among the staff nurses with selected demographic variables (Professional qualification, experience in years, in-service education program attended, and place of posting).

Methodology:-

A pre-experimental study design was conducted to assess the knowledge regarding administration of selected inotropic drugs among the staff nurses in a selected hospital of Kashmir". 60 subjects were selected by simple random sampling technique. Structured Knowledge questionnaire was adopted to collect the information from the participants in selected hospital Kashmir. The tool consisted of demographic variables (professional qualification, place of posting, working experience in years and in -service education). Prior to data collection informed consent was obtained from the participants. The data was analyzed using by descriptive and inferential statistics.

Results:-

Fig. 1:- Percentage distribution of study subjects according to professional qualification.
The data presented in Fig 1 revealed that most of the subjects 26(43%) were having the professional qualification of post basic nursing, about 21(35%) were having GNM, and least i.e.13 (22%) were having B.Sc. nursing.

Fig 2:- Percentage distribution of study subjects on the basis of working experience in years.
The data presented in Fig 2 revealed that equal number of subjects were having the working experience of <10 (50%) and >10 (50%).

Fig 3:-Percentage distribution of study subjects on the basis of place of posting.
The data presented in Fig 3 presented that most of the study subjects 25 (42%) were from surgical units, about 20 (33%) were from Medical units, 8 (13%) were from Intensive care units, and 7 (12%) were from Emergency units.

Fig 4: Percentage distribution of study subjects on the basis of In-service education program attended.
The data in Fig 4 showed that most of the study subjects 33 (55%) had attended the In-service education program; while as 27 (45%) had not attended the In-service education program.

Table 1:- Pre-test Mean knowledge score, SD, Median score, Maximum score, Minimum score, Range, Mean % knowledge of subjects regarding administration of selected inotropic drugs.

	Mean ± SD	Median	Maximum	Minimum	Range	Mean Percentage
Pre-Test Knowledge Score	13.18 ±2.861	13	22	7	15	32.15

Table 1 showed that the pre-test (Mean ± SD) knowledge score of subjects regarding the administration of selected inotropic drugs is **(13.18± 2.861),** Median is 13, Maximum score is 22, Minimum score is 7, Range is 15 and Mean percentage knowledge score is 32.15.

Fig. 5:- Post-test knowledge percentage of study subjects regarding administration of selected inotropic drugs.
The data presented in Fig. 5 showed that in the post-test most of the study subjects, i.e. 53 (88.3%) had good knowledge, 6 (10 %) had excellent knowledge, 1 (1.7%) had average knowledge and none of the subjects had below average knowledge in the post-test. The tabulated data indicates that the study subjects have likely gained knowledge after implementation of planned teaching programme.

Table 2:- Post-test Mean knowledge score, SD, Median score, Maximum score, Minimum score, Range, Mean percentage knowledge of subjects regarding the administration of selected inotropic drugs.

Post-test	Mean ± SD	Median	Maximum	Minimum	Range	Mean Percentage
Knowlede Score	26.15 ±3.019	26	34	19	15	63.78

The data presented in table 2 showed that the post-test (Mean±SD) knowledge score was (**26.15 ± 3.019),** Median score was 26, Maximum score was 34, Minimum score was 19, Range was 15 and Mean percentage knowledge was **63.78.**

Table 3:- Mean, Standard deviation, paired "t" test between pre-test and post-test knowledge scores of study subjects.

Knowledge score	Mean ± standard deviation	Mean difference	Paired t test value	P value
Pre-test score	13.18			<0.001*
Post test score	26.15	12.967	26.588	

Fig 6:-Bar diagram showing pre-test and post-test mean knowledge scores and SD.
It is evident from the data presented in table 3 and fig 6 that (Mean±SD) post-test knowledge score **(26.15±3.019**) is higher than (Mean±SD) pre-test knowledge **(13.18±2.86**1) score of study subjects with mean difference **(12.967)** regarding administration of selected inotropic drugs was found to be significant (p<0.001).

Table 4: Association of pre-test knowledge scores of subjects with selected demographic variables (Professional qualification, Working experience in years, Place of posting, In-service education program attended).

Demographic Variables	Frequency						
	Excellent	Good	Average	Below	Chi	P Value	

					Average	square Test		
Professional Qualification	GNM		0	19	2	2.678	0.613 NS	
	Post basic nursing		1	20	5			
	BSc. nursing		0	10	3			
	MSc. nursing		0	0	0			
Working Experience	<10 years		0	26	4	1.584	0.453 NS	
	>10 years		1	23	6			
Place of Posting	Medical unit		0	16	4	3.507	0.743 NS	
	Surgical unit		1	19	5			
	Intensive care units		0	8	0			
	Emergency unit		0	6	1			
Inservice Education Programme Attended	No		0	24	3	2.043	0.360 NS	
	Yes		1	25	7			

NS-Not Significant:
The data presented in the table 4 indicated that there was statistically no significant association between pre-test knowledge scores of study subjects with demographic variable as (Professional qualification, place of posting, working experience in years, and in-service education program attended) at 0.05 level of significance.

Reccommendations:-

The Following studies can be undertaken in relation to present study

1. A similar study need to be undertaken with a large number of samples for better generalization.
2. A similar study can be conducted by seeking other variables.
3. A true Experimental research approach can be used.
4. The study can be conducted among nursing student's to assess their knowledge regarding inotropic drugs.
5. Setting can be changed by involving more hospitals and nursing homes.
6. A comparative study can be conducted to assess the knowledge and attitude regarding inotropic drugs among staff nurses in General hospitals.
7. A comparative study can be conducted between nurses and other paramedical staff related importance of inotropic drugs.

Conclusion:-

The following conclusions were drawn on the basis of the findings of the study.

1. Pretest findings showed the Knowledge among staff nurses working in selected hospitals were found poor regarding selected inotropic drugs in pre-experimental group.
2. There was improvement in knowledge of study subjects after the implementation of structured teaching programme regarding selected inotropic drugs in pre-experimental group.
3. The structured teaching programme was found effective in improving the knowledge regarding selected inotropic drugs as it was evident from posttest knowledge scores and when compared with pretest knowledge score.
4. There was not significant association between selected demographic variables of staff nurses with their pre-test knowledge score (p-value>0.05). So null hypothesis was accepted at 0.05 level of significance.
5. This indicated that structured teaching programme can remain effective if provided regular basis to nursing students and staff nurses in order to increase the knowledge regarding selected inotropic drugs because they are dealt with medical surgical emergencies in general hospitals and there by can reduce the rate of cardiovascular accidents and diseases among people.

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