

## Original Research Article

## Effectiveness of self instructional module on knowledge regarding the use of defibrillator among staff nurses working in Rama hospital

Mr. Arun Kumar V.N<sup>1</sup>, Ms. Nandni Shivhare<sup>2</sup>, Mrs. Kalpana<sup>3</sup>, Ms. Karishma<sup>4</sup>, Ms. Deeksha Sachan<sup>5</sup> Mr. Vivian Eric Speedie<sup>6</sup>.

<sup>1</sup>Assistant Professor (HOD), Medical Surgical Nursing.

<sup>2-6</sup>Student nurse, Rama College of Nursing, Rama University Mandhana, Kanpur, Uttar Pradesh, India

### Abstract

B.Sc Nursing students deal with the College setting as well as Hospital setting so, they come in contact with a large number of people, their level of knowledge can be increased with the implication of self instructional module on knowledge regarding the use of defibrillator among staff nurses. Pre-experimental design with pre-test and post-test with quantitative research approach used. Study was conducted in Rama Hospital and Research Centre, Mandhana Kanpur. 30 staff nurses were selected by using non-probability convenient sampling technique. Collected data was analyzed by using descriptive and inferential statistics, level of knowledge score reveals that in pre-test 2 is the minimum score and 14 is the maximum score mean score was 7.34 with SD 0.51. Post-test level of knowledge score reveals that in post-test minimum score is 7 and maximum score is 18 (mean score was 12.66 with SD of 0.46. Significant difference was found between pre-test and post-test knowledge score. In pre-test mean score was found to be 7.34 and SD 0.51 and post-test mean score was found to be 12.66 and SD 0.46. The comparison of mean pre-test and post-test knowledge score shows an extremely significant difference at  $p < 0.05$  level (t value = 9.05) so hypothesis  $H_1$  is accepted which indicated that SIM on knowledge regarding the use of defibrillator is extremely effective.

**Keywords:** SIM, Defibrillator.

### Introduction

God given us one miracle organ it is our heart. The heart is known as the epicenter of all our emotions, new ideas and inspirations. Heart starts working as soon as 21st day of conception in mother's womb and goes on till the last breath of life. It keeps pumping blood to the cells of human body, spending sleepless nights and days. On an average the heart beats 100,000 times a day, pumping almost 7,500 liters of blood through its chambers to the rest of the body and then back to the heart. According to World Health Organization, estimates about 60% of the worlds cardiac patients will be Indians. A cardiac arrest happens when your heart stops pumping blood around your body, if someone has suddenly collapsed is not breathing normally and is unresponsive, they are in cardiac arrest .The most common cause of cardiac arrest is life threatening abnormal heart rhythm called Ventricular Fibrillation (VF) [1].

According to WHO, nearly 17.5 million live with heart disease worldwide. In the United States (U.S) cardiac arrest outside of hospitals occur in about 13 per 10,000 people per year (3, 26,000) cases. In hospitals cardiac arrest occurs in an additional 2,09,000. There were 7,249,000 deaths from IHD, accounting for 12.7% of all deaths in India .There were over 2 million deaths or over 30% of the world's total IHD. Prevalence of Coronary Heart

Disease (CHD) is between 7-13% in urban and 2-7% in rural India. A conservative estimate indicates that there could be 30 million CHD patients in India of which 14 million are in urban and 16 million in rural area [2].

Defibrillation is a common treatment for life threatening cardiac dysrhythmias and ventricular fibrillation. Defibrillation consists of delivering a therapeutic dose of electrical current to the heart with a device called a defibrillator [3]. Defibrillators can be external, transvenous, or implanted (implantable cardioverter defibrillator), depending on the type of device used or needed. High quality cardiopulmonary resuscitation remains essential for improving outcomes. Defibrillation within 3-5 minutes of collapse can produce survival rates as high as 50-70% [4]. Since nurses plays a vital role in saving the life of the patient in emergency conditions. It is necessary to know about defibrillation. So this study will help the nurses to gain more knowledge about defibrillation, its importance and its applications in emergency, thereby saving the lives of patient.

### Objectives of the study

1. To assess the pre-test knowledge of staff nurses regarding the use of defibrillator in Rama Hospital.
2. To assess the effectiveness of SIM regarding the use of defibrillator among staff nurses.

- To assess the effectiveness of SIM regarding the use of defibrillator among staff nurses.

### Hypotheses

$H_0$  There is no significant difference between the mean of pre-test & post-test knowledge scores.

$H_1$  There is significant difference between the mean of pre-test & post-test knowledge scores.

### Material and methods of used

**Research design** Pre-experimental one group pre-test and post-test design was used in the present study.

**Research approach** Quantitative research approach was used for the present study.

**Setting of the study** The study was conducted in Rama Hospital and Research Center Mandhana Kanpur.

**Population** Population for the present study were all staff nurses.

**Sampling** Non-probability convenient sampling technique was used to select 30 staff nurses of Rama Hospital and Research Center Mandhana Kanpur who fulfilled the sampling criteria for the present study.

**Sample size** 30 staff nurses.

### Variables

**Dependent variable-** Knowledge of staff nurses who were working in Rama Hospital.

**Independent variable-** In this present study Self instructional module on Defibrillator was the independent variable.

**Demographic variable:** - Age, Gender, Professional qualification, Total clinical experience, Special training, Area of experience.

### Sampling criteria

#### Inclusion criteria: -

- All registered B.Sc & GNM staff nurses who were working in Rama Hospital.
- Staff nurses who were willing to participate in the study.

#### Exclusion criteria:-

- Staff nurses who were not available during the time of data collection.

### Development and description of tools used in the study

- The tools consist of two sections.

**Section A** Demographic variables Age, Gender, Professional qualification, Total clinical experience, Special training, Area of experience.

**Section B** Question related to defibrillation. Open ended questionnaire which consist of 20 items pertaining to knowledge regarding the use of defibrillator among staff nurses.

### Data collection procedure

After obtaining formal permission from Rama Medical College, Hospital and Research Centre, Mandhana, Kanpur, the investigators conducted a research study on 19/09/2016-1/10/2016.

30 Staff Nurses were selected by using non-probability convenient sampling technique. The investigators collected the data by using self administered questionnaire. The average time taken by participants to answer the questionnaire was 15 minutes.

### Plan for data analysis

The data obtained 30 samples were analyzed by using descriptive and inferential statistics. Descriptive statistics include Frequency, Percentage, Mean, Median, Mode, Standard deviation were used to explain the demographic variables. Inferential statistics include the chi-square test used to find the association between knowledge and selected demographic variables among staff nurses.

The investigator planned to analyze the data in the following

Manner

### Data analysis and major findings

#### Section 1 Demographic data

- Total samples (30), highest percentage (66.67%) of staff nurses were in the age group of <25 years, 23.33% of staff nurses were in the age group of 26-30 years and the lowest percentage (10%) of staff nurses were in the age group of 31-35 years and there were no staff nurses who belonged to age group of 36-40 years and above.
- About the gender, among the total samples, 66.64% of staff nurses were females and remaining 33.33% of staff nurses were males.
- The majority of staff nurses 90% had done G.N.M. 6.67% had done Basic B.Sc. Nursing and 3.33% had done Post basic B.Sc. Nursing. There were no staff nurses who had done M.Sc. Nursing and above.
- The majority of staff nurses 56.66% had total clinical experience in between 1-5 year, 30% had total clinical experience <1 years, 10% had total clinical experience in between 6-10 years and 13.34% had total clinical experience in between

11-15 years. There were no staff nurse who had total clinical experience 16 years and above.

- The majority of staff nurses 86.67% had not attended any special training whereas 13.33% had attended special training.
- The majority of staff nurses 70% had working experience in general wards, 4 13.33% had working experience in O.T, 6.67% staff nurses had working experience in I.C.U./N.I.C.U, 3.33% had working experience in emergency dept. and 6.67% had working experience in any other ward (Ortho ward).

**Section 2 Level of pre-test knowledge score on defibrillator among staff nurses**

Among 30 staff nurses, 0 staff nurses possess adequate knowledge whereas 23.34% had moderate knowledge and 76.66% staff nurses had inadequate knowledge.

**Section 3 Level of post-test knowledge score on defibrillator among staff nurses**

After SIM the post test knowledge score among 30 staff nurses 13.33% staff nurses who possess adequate knowledge whereas 23.34% had moderate knowledge and 13.33% staff nurses had inadequate knowledge.

**Section 4 Effectiveness of SIM on knowledge regarding the use of defibrillator among staff nurses**

**Table 1 Effectiveness of SIM On knowledge regarding the use of defibrillator among staff nurses.**

Knowledge Score	N	Mean	S.D	t value	P
Pre-test	30	7.34	0.51	9.05	3.66
Post-test	30	12.66	0.46		

The mean score before and after administration of SIM has shown a significant difference. The mean total knowledge score before invention was 7.34 which has increased to 12.66 after invention, the paired t test 9.05 was found to be significant at very high level (p=3.66) at 0.05 level.

**Section 5- Association between the demographic variables and knowledge score on defibrillator among staff nurses**

Association between knowledge scores and selected demographic variables of staff nurses shows that there was no significant association between the knowledge scores and age, gender, professional qualification, total clinical experience, any special training, and area of experience at 0.05 levels.

**Recommendations**

- On the basis of findings, it is recommended that
- A large scale study can be carried out to generalize the findings.
- A similar study can be conducted by true experimental approach.
- A similar study can be conducted by using the information booklet for educating the cardiac technician.
- Same study can be conducted on sample of staff nurses to generalize the findings.

**Conclusion**

The study significantly proved that there is a remarkable improvement in the knowledge on defibrillator among staff nurses, after self instructional module. Most of the staff nurses had moderate knowledge regarding use of defibrillator. Almost all nurses had moderate level knowledge in all the areas, namely Anatomy and Physiology of heart, ECG and assessment of shock able arrhythmias, defibrillator and defibrillation. Adequate level knowledge appears to be associated with the total length of working experience of staff nurses both in Emergency department and OT. Greater knowledge scores were obtained from those staff nurses who had working experience in OT.

**Bibliography**

- [1] Cardiac arrest- causes and recovery- British HeartFoundation.<https://www.bhf.org.uk>conditions>cardiac.arrest>.
- [2] WHO/Cardio Vascular Diseases (CVDs)-world health organization. [www.who.int>Cardiovascular.diseases](http://www.who.int>Cardiovascular.diseases).
- [3] Mortality from Ischemic Heart Disease (IHD). <https://www.ncbi.nlm.nih.gov/pmc/articles/pmc3819990/page14>.
- [4] Vidya Rajesh Gupta. International your nulls of science and research (IJSR). 155N.Vol 3 issue 6 tune 2014 (www.ijsr.net).
- [5] Sharma S. Nursing and Research and Statistics. New Delhi: Elsevier A division of Reed Elsevier India Private Limited; page no.218.
- [6] Automated external How to use an AED (Automated External Defibrillator) [googleweblight.com](http://googleweblight.com)