

Effectiveness of a Self Instructional Module [SIM] on Knowledge of Emergency Drugs Among Staff Nurses Working In Critical Care Units of a Selected Hospital, Dehradun.

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ABSTRACT

Background: Nurses are integral part to health care delivery and it is important that they have a clear understanding of the nature of the drugs prescribed. The critical care nurse serves as a catalyst in the healing process, making complex and timely judgments and decisions and taking actions for which the nurse remains accountable. The rationale of such decision is based upon the thorough knowledge of the health and life saving measures, fully developed skills in administering medications. The knowledge base is upgraded continuously by new clinical and educational experiences that reinforce the critical care nurses professional practice and autonomy.

Objectives: The study was aimed to determine the effectiveness of Self Instructional Module on knowledge of emergency drugs among staff nurses working in critical care units of a selected hospital.

Material & Methods: The study was aimed at assessing the effectiveness of self-instructional module on knowledge of emergency drugs among nurses working in Critical Care Units of Combined Medical Institute Hospital, Dehradun ,India. Pre-experimental design was used to assess the knowledge level of staff nurses regarding emergency drugs. Data was collected from 50 staff nurses by purposive sampling technique and by using valid questionnaires.

Results: The results of the study indicates that the Self Instructional Module was effective in improving the knowledge of staff nurses hence improving the quality of services delivered by staff nurses.

Conclusion: This paper reports the importance of Self Instructional Module in improvement of knowledge of staff nurses regarding emergency drugs.

Keywords: self instructional module, emergency drugs, critical care units, staff nurses.

Introduction:**Emergency Drugs**

A drug, broadly speaking, is any substance that, when absorbed into the body of a living organism, alters normal bodily function. There is no single, precise definition, as there are different meanings in drug control law, government regulations, medicine, and colloquial usage. In pharmacology, 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. (Stuart D. Rosen, Sanjay Sharma ,1997)

A drug is defined as any substance (other than a food or device) intended for use in the diagnosis, cure, relief, treatment, or prevention of disease or intended to affect the structure or function of the body. (Oral contraceptives are an example of drugs that affect the function of the body rather than a disease.) This comprehensive definition of a drug, although important for legal purposes, is rather complex for everyday use. A simpler but workable definition of a drug is any chemical substance that affects the body and its processes. (Joan . T . Dolan,1994)

Emergency Drug is administered immediate and giving continuous treatment during a life- threatening condition. The conditions ranging from heart attack, stroke, and severe respiratory insufficiency, to burns and gunshot wounds, can cause serious systemic complication, such as respiratory distress and failure of atleast one organ. Emergency Drugs are usually administered in a separate area of the hospital and practiced by highly risked and specialized health care professionals. Intensive units visits co-ordinate the administrative environment of the intensive care unit by setting policies, developing protocols and facilitating communication among specialists, patients and their families. (Lewis MS, Heit Kemper MM, Dirksen, 2004)

Knowledge:

The nurse needs to have adequate knowledge in assessing patients health and planning health care activities in emergency situation. Nurse should apply the right skill to care for sick and injured. The nurse should be more careful in administration of drugs because the nurse is introducing a chemical substance, which has a certain possible reaction effect in the body. The critical care nurse must be capable of performing a unique and integral role in the treatment and if needed of using life saving measures in critical care areas by herself. The modern nurse participates and collaborates with the physician and pharmacist in administering and evaluating the effectiveness of drug therapy plan. (Geetha D& Santhosh C, 2003)

Medication errors could effectively be reduced by systematically identifying, eliminating, or minimizing human and system risks. However, errors associated with random events may never be controlled by risk reduction efforts because of the unpredictability of the events preceding the error. Identifying and reducing risks is an important as acknowledging medication errors after they occur. Medication administration is a nursing function that incorporates scientific knowledge, technical skill, and ritualistic practice .When nurse give medications and make medication errors, they remember their responsibility to do good and avoid harm. Nurses can better exert this responsibility by taking a more prospective, risk reduction approach by gain more knowledge to avoid medication errors. (Brown. M, 2005)

Objectives:

- To assess the Pre-test level of knowledge regarding emergency drugs among nurses working in critical care units.
- To assess the Post-test level of knowledge regarding emergency drugs among nurses with in critical care unit.
- To find out the effectiveness of SIM with Pre-test knowledge level and Post-test knowledge.
- To find association between the level of knowledge in post test with selected demographic variables of the subject.

Materials and Methods

A pre-experimental research design was used for this study. The study had one population i.e staff nurses of critical care units. Permission was obtained from Combined Medical Institute, Dehradun for conducting the study. Purposive sampling technique was used to collect data from 50 staff nurses Combined Medical Institute, Dehradun from 08/03/2011 to 08/04/2011, after obtaining informed consent from them. Descriptive statistics like mean, standard deviation, reliability coefficient and correlation was used.

Instruments

The data was collected by using following questionnaires:

- A structured knowledge questionnaire which consists of two sections:

- a) Socio- Demographic questionnaire for background information
- b) A structured questionnaire to assess the level of knowledge of nurses in Critical Care Units.

Prior permission was taken from standardized tool developers for using tools in the study.

The staff nurses were asked to respond to their demographic information questions.

1. *Socio- Demographic questionnaire for background information.*

Questionnaire to elicit the baseline variables. This part of questionnaire is to find out the information from staff nurses about their Gender, Educational qualification, Total years of working experience, Exposure to in-service educational training.

2. *A structured questionnaire to assess the level of knowledge of nurses in Critical Care Units*

A structured questionnaire to assess the level of knowledge of staff nurses in C.C.U. about emergency drugs. This consists of 40 multiple choice questions, divided into 6 sections. Items on general information about emergency drugs, action, dose, indication, contraindication, side-effect, and nurses responsibility. Each question is having four options from which instructions were clearly written to choose the best options. Each correct item was scored as "1".

Results:

Findings related to demographic variables;

1. The respondents consists of 15 (30%) males and 35 (70%) females.
2. Majority of the respondents 34 (68%) GNM and 16 (32%) of them had BSc (N) degree.
3. With regard to working experience, 27 (54%) had 1 year of experience, 12 (24%) had 3-4 years of experience, 11 (22%) had above 4 years of experience.
4. With regard to experience in critical care units, 54% had 1 year of experience, 16 % had 2 years of experience, 10 % had 3 years of experience.
5. Regarding additional qualification, 18% had attended in service training, majority not exposed to any training.

Finding related to effectiveness of Self Instructional Module:

The overall mean percentage of post test knowledge scores on emergency drugs among nurses is 84.6% is apparently higher than the overall mean percentage of pre-test knowledge score 50.1 % and is significant at 0.05 level.

Table 1: DISTRIBUTION OF SUBJECTS ACCORDING TO THE SOCIO-DEMOGRAPHIC VARIABLES:**N=50**

CHARACTERSTICS	CATEGORY	RESPONDENTS	
		NURSES	PERCENTAGE
Gender	Male	15	30%
	Female	35	70%
Professional Qualification	GNM	34	68%
	BSC(N)	16	32%
Experience	1-2years	27	54%
	3-4years	12	24%
	Above 4	11	22%
Experience in Critical care unit	1 year	27	54%
	2 year	08	16%
	3 years	05	10%
Additional Qualification	Yes	09	18%
	No	41	82%

SECTION- B: ASSESSMENT OF STAFF NURSES EXISTING KNOWLEDGE (PRE-TEST) ON EMERGENCY DRUGS.

Table. 2 Pre test knowledge level on Emergency Drugs among Nurses working in CCU

N=50

Knowledge Level	RESPONDENTS NUMBER	RESPONDENTS PERCENTAGE
Inadequate (< 50%)	23	46.0
Moderate (51-75%)	27	47.0
Adequate (> 75%)	0	0
Combined	50	100

The pre-test knowledge level reveals Inadequate, Moderate and Adequate level. Table- 2 Depicts that 23(46%) of respondents belongs to inadequate level, 27(54%) of respondents belongs to moderate level and none of them had adequate level of knowledge.

Table.3. Pre test knowledge score on Emergency Drugs among Nurses

N=50

ASPECT	STATEMENT	MAX SCORE	RANGE SCORE	MEAN	MEAN%	SD%
Pre-Test	40	40	9-29	20.02	50.1	15.1

Table.3 depicts that the overall pre test knowledge score on knowledge of Emergency drugs found to be 50.1% with SD 15.5%.

**Table.4. Post test knowledge level on Emergency Drugs among Nurses working in CCU
N=50**

Knowledge Level	RESPONDENTS NUMBER	RESPONDENTS PERCENTAGE
Inadequate (< 50%)	0	0.0
Moderate (51-75%)	5	10.0
Adequate (> 75%)	45	90
Combined	50	100

The post test knowledge level on emergency drugs depicted in Table- 4 . > 75% of the respondents acquired adequate knowledge (90%),and 51-75% of respondents acquired moderate knowledge(10%), and none of them had inadequate knowledge.

Table.5. Post test knowledge score on Emergency Drugs among Nurses

ASPECT	STATEMENT	MAX SCORE	RANGE SCORE	MEAN	MEAN%	SD%
Post-Test	40	40	23-37	33.84	84.6	6.3

*

Significant at 5% level, $t(0.05, 48 \text{ df}) = 1.96$

The post test score on knowledge on emergency drugs depicted in Table-5. The finding indicates that overall post test mean knowledge score on emergency drugs found to be 84.6% and SD value 6.3% among the respondents.

Table.6. Pre test and Post test knowledge level on Emergency Drugs among Nurses

ASPECT	PRE-TEST		POST-TEST		N=50 χ^2 VALUE
	N	%	N	%	
Inadequate (< 50%)	23	46.0	0	0.0	80.13*
Moderate (51-75%)	27	54.0	5	10.0	
Adequate (> 75%)	0	0.0	45	90.0	

*Significant at 5% level , $\chi^2(0.05,2df) = 5.991$

The comparison of the values of pre test and post test knowledge level depicted in Table-6.

χ^2 - value was used to measure different aspects of knowledge level. Respondents knowledge level was inadequate 23 (46%) in pre test , 0% in post test, moderate 27(54%) in pre test, 5(10 %) in post test, Adequate 0% in pre test, but in post test it increased to 45(90%) . Statistical value χ^2 83.13, Significant at 5% level. The above data is depicted through bar diagram in Fig. 5.

SECTION-D: ASSOCIATION BETWEEN THE LEVEL OF KNOWLEDGE IN POST TEST WITH SELECTED DEMOGRAPHIC VARIABLES OF THE SUBJECTS.

Table.7. Association between the level of knowledge in post test with selected demographic variables of the subjects.

N=50

Variable	Category	Post test Scores				χ^2 -Value	P-value
		Moderate		Adequate			
		N	%	N	%		
Gender	Male	1	6.7	14	93.3	0.26	P>0.05 NS
	Female	4	11.4	31	88.6		
Professional Qualification	GNM	4	11.8	30	88.2	0.37	P>0.05 NS
	B.Sc N	1	6.3	15	93.7		
	PcBSc N	0	00	00	00		
	M.Sc N	0	00	00	00		
Work Experience in years	1-2	2	7.4	25	92.4	4.24	P>0.05 NS
	3-4	3	25	9	75		
	Above 4 Years	0	00	11	100		
Experience in CCU	One year	3	8.1	34	91.9	2.70	P>0.05 NS
	Two year	2	25	6	75		
	Three years	0	0.0	5	100		
Additional Qualification	Yes	1	1.1	8	88.9	0.02	P>0.05 NS

Table.8. shows that, the association between Gender and post test knowledge level on emergency drugs was inadequate and adequate levels. Male 1(6.7%) had moderate knowledge, 14(93.3%) had adequate knowledge. Female 4(11.4%) had moderate level of knowledge, 31(88.6%) had adequate knowledge. There for χ^2 value for association between gender and post test knowledge level was 0.26, non-significant $\chi^2(0.05,1df)=3.841$. It is inferred that there is no significant association between gender and knowledge level. The knowledge level of respondents according to professional qualification, GNM 4(11.8%), BSc 1(6.35) had moderate knowledge, 30(88.2%), 15 (93.7%) adequate knowledge in post test, Chi-square value 0.37, non-significant.

Discussion

The study intends to find the effectiveness of the Self Instructional Module on knowledge of emergency drugs as a means to improve the knowledge of the nurses working in critical care units of selected hospital. The investigator found that the Self Instructional Module was an effective teaching strategy to improve the knowledge of nurses working in critical care units of selected hospital.

The findings of the study were as follows

SECTION A : Distribution of Socio-demographic variables of nurses in Critical Care Units. **SECTION B** : Assessment of nurses existing knowledge on emergency drugs.

SECTION C : To find out the effectiveness of SIM on emergency drugs among the nurses working in critical care units.

SECTION D : Association between the level of knowledge in post test with selected demographic variables of the subjects.

Implications

1. The expanded role of professional nurse emphasizes the activities, which includes promotive, preventive, curative and rehabilitative aspects. Nurses play an important role in disease prevention and health promotion. Health information and knowledge on emergency drugs can be imparted through various methods like mass media, lecture, SIM and display etc.
2. Nurse educators should make use of the SIM, which is prepared for use a teaching tool.
3. The nurse administrator need to collaborate with the governing bodies in formulating policies to provide in- service education to update the nurses knowledge
4. Encouraging nurses to read, discuss, & conduct research studies so as to enable the nurse to make data based decisions rather than intuitive nursing decisions.

Acknowledgements

The author is highly thankful to the Hospital Administration to carry out the research project and for the cooperation of officials ,staff nurses of Combined Medical Institute & Hospital , Dehradun. Author is also thankful to his research Guide Mrs. Prof. Renuka Silas. M.Sc(N) & Late Dr. Santosh Arora for timely guidance & motivation and his parents for constant support throughout the study.

Financial Disclosure

Not declared

Conflict of Interest

None declared

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