



Research article

A study to assess the effectiveness of self-instructional module on knowledge of health care professionals regarding Ebola virus

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Abstract

The governments of all over the world take precautionary actions to save their population from the Ebola disease. The lack of knowledge about the Ebola disease and their precautions is a big problem in the world. It is very important for the hospital staff to know the control and prevention methods to limit the disease. The objectives of the study includes the knowledge score regarding preventive aspects of Ebola virus before administration of self-instructional module among health care professionals, the knowledge score regarding preventive aspects of Ebola virus after administration of self-instructional module among health care professionals, to compare the pretest and posttest knowledge score and to find out the association between demographic variables and knowledge score regarding preventive aspects of Ebola virus among health care professionals. This study was based on quasi research approach. The researchers used one group pretest posttest research design. The target sample for the study was health professionals of the Hospital. Non-probability convenient sampling technique and structured questionnaire were used for the study. In conclusion, this study suggested that if the Doctors, Nurses and other healthcare professionals in primary care to provide innovative methods of support people with uncontrolled Ebola virus disease have good knowledge about the disease then it will improve clinical outcomes and self-efficacy for patients with the disease.

Keywords: Ebola, Virus, Filo-virus, Nursing, health care professionals

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1. Introduction

The fundamental right of the every human being is to have a good health and healthcare facilities. India is the second most populated country in the world which has around 1.27 billion population. It is very tough job for the Indian government to provide good health and healthcare facilities to all the population. In the beginning of nineties centuries, Communicable diseases were the main reason by which Indians face many deaths [20]. The Indian government has taken considerable efforts to destroy health disparities and eliminate health disparities which are present in the

country. This problem is very significant to the nursing practice because according to the public and health care professionals, nursing is to care patients and to teach their families, the community, students and other healthcare team members about the care and needs for a preventive action. A person in nursing profession provides information about the disease to the patients and teaches them about treatment, medications and rehabilitation needs. A Healthcare professional can develop a risk management and quality improvement strategies, synthesize qualitative and quantitative information from a variety of health sources, and

apply theories which relate to group dynamics roles and organizations [1].

An Ebola Virus disease first seen in 1976 and severely affected the West Africa. It is very important for the healthcare professionals understand the disease and provide timely precautions. The healthcare professionals help patients to understand their disease and dealing with this life changing situation. They also teach patients about how to care at home when required. A healthcare professionals show leadership by advocating for individuals, families, groups and communities in relation to treatment, the health care system and policy decisions that affect the health and quality of life and monitoring and coaching nursing colleagues, other members of the health-care team, and students. This paper evaluates the knowledge level of the Doctors, Nurses and other healthcare professional in Kamalnayan Bajaj Hospital on Ebola Virus and their preventive aspects.

It is true that Ebola is a rare epidemic disease, but it is also true that it has a mortality rate of 40%-90%. This disease is new for the researchers and most of them are not fully aware with it. So, it is very essential for the hospitals to provide full knowledge of the Ebola disease with their signs and symptoms to their healthcare professionals. Especially in Ebola disease education and awareness is most important [19].

Aim of the research

The consequences of Ebola virus are endless and the Doctors, Nurses and other healthcare staff need a good knowledge to fight back with the disease. This survey was conducted among the healthcare professionals to find out their knowledge on the effect of Self-instructional Module on Ebola Virus and preventive aspects of it. This survey will help the healthcare professional to create awareness about the Ebola Virus, its early detection and Prevention [2].

Patients and methods

The researcher used quasi experimental one group pre-test post-test design for conducting the study. In the study design, the researcher had

chosen a group of women of reproductive age group residing in selected areas. A Self-instructional module on the preventive aspects of Ebola virus was administered to the health care professionals working in the Kamalnayan Bajaj Hospital and their level of knowledge was assessed.

In the present study a pretest was taken by means of semi-structured questionnaire based on the preventive aspects of Ebola virus for assessment of the level of knowledge of health care professionals working in the Kamalnayan Bajaj Hospital. After initial assessment (pre-test), Self-Instructional Module was given to the samples. And post test was conducted for the same samples.

The pilot study was conducted in selected areas and 5 samples were selected by Non-probability Convenient sampling technique that is based on the inclusion criteria to assess the feasibility of the study and to decide the statistical analysis and practicability of research. Prior administrative permission of the above institute was taken. The researcher approached the subjects, informed regarding the objectives of the study and obtained consent after assuring the subjects about the confidentiality of the data. A structured questionnaire was given to each sample. The finding of the Pilot study was analyzed. A Pilot study conducted shows that it is feasible to conduct a final study with the present tool [16].

Data collection

The data gathering process began from a formal permission was obtained from the concerned authorities. Subjects were taken from the selected areas using convenient sampling. The researcher familiarized self and educated the samples about the nature of the study so as to ensure better co-operation during the data collection. Objectives of study were discussed and consent was obtained for participating in the study [5].

Subjects were assured about the confidentiality of the data. Each subject was given a structured

questionnaire for pre-test followed by self-instructional module and then post-test questionnaire were given. The data analysis was planned to include descriptive and inferential statistics. A plan of analysis was made with the consultation of the statistical expert. A plan of analysis was categorized into four sections. They are as below:

Section I: Description of samples (Health care professionals working in Kamalnayan Bajaj hospital) according to Demographic characteristics by frequency and percentage.

Section II: Analysis of data related to knowledge regarding preventive aspects of Ebola virus before and after administration of self-instructional module among Health care professionals working in Kamalnayan Bajaj hospital.

Section III: An analysis of data to compare the pretest and posttest knowledge scores regarding preventive aspects of Ebola virus diseases among the Health care professionals.

Section IV: An analysis of data to associate demographic variables and knowledge score regarding preventive aspects of Ebola virus.

A Quasi approach with one group per-test post-test design was carried out on 50 Health care Professionals Working in Kamalnayan Bajaj Hospital to assess the Effectiveness of self-instructional module on knowledge regarding preventive aspects of Ebola virus among Health care Professionals Working in Kamalnayan Bajaj Hospital. Structured questionnaires were used to assess the level of knowledge after the implementation of self-instructional module. Its reliability and validity were established [13].

Result

The result of the study revealed that total five demographic variables of the health care professional group were assessed through a structured questionnaire. Each Demographic variable had a minimum of 2 and maximum of 4 options. Each was tabulated in the analysis session

Table: Demographic Variable

N=50			
SN	Variables	Frequency	Percentage (%)
1	Age		
	a)20 -29 years	34	68
	b)30 -39 years	11	22
	c)40 -49 years	04	08
	d) Above 50 years	01	02
2	Sex		
	a) Male	19	38
	b) Female	31	62
3	Educational status		
	a) Doctors		
	i) M.B.B.S	05	10
	ii) B.H.M.S	04	08
	iii) B.H.M.S	01	02
	b) Staff Nurse		
	i) G.N.M	21	42
	ii) B.Sc. Nursing	14	28
	c) Technicians	02	
i) C.M.L.T	02	04	
ii) D.M.L.T	01	02	
iii) Others		02	
4	Area of Experience		
	a) Ward	30	60
	b) ICU	15	30
	c) Laboratory	05	10
5	Year of Experience		
	a)< 10 years	37	74
	b) > 10 years	13	26

According to the table of demographic variables, the majority 34 (68%) of Health Care Professionals belonged to the age group of 20-29 years. With regard to the sex 19 (38%) belonged to the Male sex, 31 (62%) Health Care Professionals belongs to the female sex. With regard to educational status of Health Care Professionals 10 (20%) Doctors, 35 (70%) Staff nurse, 5 (10%) technicians. It was found 37 (74%) of Health Care Professionals less than 10 years of experience, 13 (26%) were more than 10 years of experience.

The analysis of level of knowledge of health care professionals about the Ebola virus shows the knowledge of health care professionals about prevention of Ebola virus that 4 (8%) health care professionals had poor knowledge and 45 (90%) health care professionals had average knowledge and only 1 (2%) had good knowledge on

prevention of Ebola virus in the pre test after giving self-instructional module the post test showed that 1 (2%) health care professionals had average knowledge and 49 (98%) health care professionals had good knowledge on prevention of Ebola virus. This shows that self-instructional module was very effective and improved the knowledge level of the health care professionals on the prevention of Ebola virus hence, the hypothesis was supported [11].

Table: Level of knowledge of health care professionals about the Ebola virus N=50
Maximum score=25

SN	Level of Knowledge	Pre test		Post test	
		No.	%	No.	%
1	Poor (<28%)	4	8	0	00
2	Average (28-60%)	45	90	1	2
3	Good (>60%)	1	2	49	98

The analysis of comparison of the mean knowledge score of health care professionals regarding prevention of Ebola virus in pretest and posttest shows The average pretest knowledge score among the health care professionals regarding prevention of Ebola virus was found 11.3 but after the input of self-instructional module the mean posttest knowledge score has increased to 20.6 Thus, the difference in level of the knowledge was confirmed by the 't' value (9.7), which was significant at p 0.05 and the self-instructional module was effective. So the 't' test of table value 2.06 and the calculated value (9.2) more than the table value. So the null hypothesis is rejected.

Table: Comparison of the mean knowledge score of health care professionals regarding prevention of Ebola virus in pre test and post test N=50

Group	Mean	Median	S.D	Mean differences	't' Value
Pre test	11.3	-	2.15	9.3	9.7
Post test	0.6		.12		

S-Significant Maximum score=25

Significant at 0.05 level. $t_{49} = 2.06p > 0.05$ (significant at 0.05 level).

The analysis of Association of knowledge scores of Health Care Professionals with their selected demographic variable table reveals that all the samples had more or less scores. Also calculated 'F' value is < table 'F' value, which was not significant. Hence it is interpreted that there is no association between posttest knowledge score with Demographic Variables.

Table: Association of knowledge scores of health care professionals with their selected demographic variable

N=50

Age (year)	Frequency	F-value	P value	Level of significance
20-29	34	0.02	2.86	No Significance
30-39	11			
40-49	04			
50 and above	01			
Gender	Frequency	t-value	P value	Level of significance
Male	19	0.18	2.02	No Significance
Female	31			
Year of Experience	Frequency	F value	P value	Level of significance
Less than 10 years	37	0.058	4.04	No Significance
More than 10 years	13			

Discussion

The analysis of samples description (health care professionals) according to demographic characteristics by frequency and percentage revealed that the health care professionals are different in the terms of Age, Sex, Education and Years of Experience:

Age: 68% of the Health care professional's age group was from 20-29 years, 22% of them were from 30-39 years, 08% of them were from age group 40-49 years and 2% of them were from above 50 years.

Sex: 38% of the Health care professionals are Female and the 62% of the Health care professionals are Male.

Education: 20 % of them had Doctorate, 70% of them had Register nurse's, 10% of them were Technicians.

Year of experience: 74 % Health care professionals working experience are less than 10 years and 26% are more than 10 years working experience.

The Analysis of data related to knowledge regarding preventive aspects of Ebola virus before administration of self-instructional module among Health care professionals revealed that in pretest before administration of self-instructional module, majority 8% of the health care professionals had a poor knowledge regarding the preventive aspect of Ebola virus disease, 90% of them had average knowledge, whereas 2% of them had good knowledge regarding preventive aspects of Ebola virus disease [9].

The Analysis of data related to knowledge regarding preventive aspects of selected Ebola virus after administration of self-instructional module among Health care personnel revealed that after administration of self-instructional module, majority 98% of the Health care professionals had a good knowledge regarding preventive aspects of Ebola virus disease and 2% of them had average knowledge regarding preventive aspects of Ebola virus disease [13]. The analysis of data to compare the pretest and posttest knowledge score regarding preventive aspects of Ebola virus disease among women of reproductive age group indicates that the knowledge of the Health care professionals improved remarkably after the use of self-instructional module regarding preventive aspects of Ebola Virus Disease. An analysis of data that associate demographic variables and knowledge score regarding preventive aspects of Ebola virus revealed that none of are the demographic variables was found to have significant association with knowledge of the women in reproductive age group regarding preventive aspects of Ebola virus disease [15]. This study revealed that Self-instructional module can be used by the nursing student to educate the other person on Preventive aspects of Ebola virus during their clinical posting in the wards. Nurses should enhance their professional knowledge. The

finding of the Study can be used to bring about awareness among the nurses regarding Preventive aspects of Ebola virus. Nursing students are the future educators and practitioners; hence they need to know about all the preventive aspects of Ebola virus [9]. This study helps to understand that the Student should know the importance of preventive aspects of Ebola virus. The knowledge about same can reduce the morbidity rate up to some extent. Nurse Educators can use self-instructional module on preventive aspects of Ebola virus to educate the peripheral level health workers to improve the knowledge, regarding the Preventive aspects of Ebola virus disease [17]. The findings of the study reveal the need to conduct some educational programs for nurses, which will help them to gain more awareness regarding preventive aspects of Ebola Virus. It will help in tackling the existing problems of raising statistics of Ebola virus due to which the frequent morbidity rate in the country can be brought to halt. It will help in building healthy nation and productive future of our Society. Planning and organizing educational programs in all the parts of society can better is entrusted with nursing administrators. The administrators should Self-instructional Module on Preventive aspects of Ebola virus among the health care professionals in their hospitals [14].

Conclusion

In conclusion, the analysis of data revealed that there was a significant difference between pre-test and post-test knowledge score. The self-instructional module significantly brought out improvement in the knowledge of the preventive aspects of Ebola virus among the health care person. Therefore, this study could help in bringing awareness among the general population worldwide.

Limitation

1. The study is limited only to the health care professionals in selected hospitals.
2. The study is limited to health care professionals of above 20 years.

Recommendations

Keeping in view the findings of the study, the following recommendations were made:

On the basis of the findings of the study, it is recommended that, a similar study may be replicated on a large sample. It may help to draw more definite conclusions and make generalizations [18].

- A similar study may be conducted in the nursing colleges.
- A similar kind of study can be undertaken in different settings and different target groups.
- Nurse Educators can use self-instructional module on preventive aspects of Ebola virus to educate the peripheral level health workers to improve the knowledge, regarding the Preventive aspects of Ebola virus disease.
- A comparative study can be carried to ascertain the knowledge regarding the preventive aspects of Ebola virus among the students of general and professional colleges.
- A study can be conducted to compare the effectiveness of information booklet with other teaching strategies.

References

- [1] Polit DF, Beck CT. (2008). "Essentials of Nursing Research". 8th Edition. Philadelphia: J.B Lippincott Publication; page no.82-5.
- [2] Burns, N., & Grove, S. K. (2010). Understanding nursing research: *Building an evidence-based practice*. Elsevier Health Sciences.
- [3] Basavanhappa, B. T. (2007). Textbook of Nursing Research. *Review of Literature, Jaypee Brothers. New Delhi.*
- [4] Bible, T. H. (1966). New Revised Standard Version (Catholic Edition)(Scepter, Princeton, NJ). 277
- [5] Polit, D. F., & Beck, C. T. (2004). *Nursing research: Principles and methods*. Lippincott Williams & Wilkins.
- [6] Florence S, (2015). "Ebola virus disease: An overview". *Nightingale Nursing Time, vol. X, no.10, pg no.17-19.*
- [7] Taherah N. (2010). "To assess the effect of instructional manual on knowledge and self-expressed practices among the smokers suffering from unstable angina disease". *Nurses of India, vol.11, no.1.*
- [8] Lathamangeswari, (2010). "Nightingale Nursing Times".Vol.6, no.6.
- [9] Nandeesh, (2010). "To make the post myocardial infarction patients to read the self-instructional module of life style modification and to assess the effectiveness in relation to the knowledge". *Nightingale Nursing Times. Vol.6, no.861.*
- [10] Jayasudha A. (2008). "To assess effectiveness of knowledge of family planning methods among the pregnant mothers through SIM". *Nursing Journal of India, Vol. XCIX, no.7.*
- [11] Giri J. (2008). "To assess the effectiveness of SIM on hepatitis among the High school teachers in selected high schools of Bangalore south". *Nightingale Nursing Time, Vol. 3, no. 12.*
- [12] Juliana Linnets D. (2008). "The learning needs of adolescent with a view to develop and evaluate of a SIM on safe motherhood". *The nursing Journal of Indian, Vol. LXXXI, No. 8.*
- [13] Nageshwari K. (2009). "Role of self-instructional module in creating awareness about coronary artery disease". *Nurses Nightingale times, Vol.5, No.1, page 27-32.*
- [14] Verma P. (2003). "Impact of Self-instructional Module for Nurses on nursing management of the patients having chest tube drainage". *Nursing Journal of India.*
- [15] Dipali K. et al, (2014). "A quasi-experimental study to assess the effectiveness of lecture-cum-demonstration on use of first aid box on knowledge and practice of school teachers in selected schools in Aurangabad city". Kamalnayan Bajaj Nursing College, Aurangabad.
- [16] Anjum S.et al, (2014). "A quasi -experimental study to assess the effectiveness of SIM (self-instructional module) regarding biomedical waste management on knowledge among staff nurses in selected hospital in Aurangabad during 2013-2014".Kamalnayan Bajaj Nursing College, Aurangabad.
- [17] Bhaduri, K.K. (2002). "A study to develop and determine the effectiveness of information booklet on cancer risk factors in terms of knowledge gain among college students of selected colleges in Pune city". Bharti Vidya Peeth College of Nursing, Pune.
- [18] Kalyani M. (2014). "Effectiveness of self-instructional module on knowledge regarding preventive aspects of selected cancers among women of reproductive age group". Sinhgad University, Pune.
- [19] (2014). "Beware! Ebola virus could hit India". India Today, New Delhi. Retrieved from Indian today.
- [20] (2014). "New research calls for forceful control interventions to steam Ebola outbreaks". Zee News, India.