

A study to assess the effect of self- instructional module on knowledge of nurses regarding management of snake bite in little flower hospital, Angamaly

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Abstract: Snake bite is a bite or a puncture wound made by a snake that is capable of injecting, secreting, or spitting a toxin into the penetrated skin wound or, mucus membranes or the eyes where the toxin can be absorbed. A quantitative study was conducted to assess the effectiveness of self-instructional module for staff nurses regarding management of snake bite at Angamaly. The objectives of the study were to assess the level of knowledge of staff nurses before and after administering self-instructional module and find out the association between mean pre-test level of knowledge of staff nurses regarding management of snake bite and selected demographic variables. One group pre-test post-test design was adopted for the study. The sample comprised of 50 staff nurses selected by purposive sampling technique from Little Flower Hospital, Angamaly. A structured knowledge questionnaire was used to collect the data. The data were analyzed by descriptive and inferential statistics. The findings of the study showed that 36% have excellent knowledge in the pre-test where as in the post-test 68% of staff nurses had excellent knowledge regarding management of snakebite among staff nurses. The findings of the study showed that 48% have good knowledge in the pre-test where as in the post-test 32% staff nurses had good knowledge regarding management of snakebite among staff nurses. The computed t value ($t=13.83$; $p=0.000$; <0.01) showed a significant difference between pre-test and post-test knowledge score; hence the self-instructional module was effective in improving knowledge of staff nurses regarding management of snake bite. There was no significant association between the level of knowledge and selected demographic variables.

Key Words: Effect; self-instructional module; Management of snake bite; Staff nurses.

1. INTRODUCTION:

Snake bite is a life-threatening medical emergency and major public health problem throughout the world. Snake bite is more prevalent in temperate and tropical countries. Snakes are distributed all over the world except in Antarctic, New Zealand and Ireland. There are about 3000 species of snakes in the world known to date, out of which 300 species are poisonous to man.¹

1.1 NEED AND SIGNIFICANCE OF THE STUDY:

Amazing fact is that, India holds 1st place in morbidity and mortality rate in south Asian and African countries. After the India, Shrilanka with the incidence of 33thousand, Vietnam with the incidence of 30 thousand, Brazil with the incidence of 30 thousand, Mexico with the incidence of 28 thousand and Nepal with the incidence of 20thousand cases. Reason for increased fatality rate is reported in India is due to negligence, seeking traditional remedies, lack of management, inadequate transport and medical care facilities.²

Nurses has an important role in identifying venomous bites, observing for early manifestations and administering ASV timely and thereby preventing complications and mortality. The knowledge of the practicing nurses has an effect on the quality of care. Thus the investigator felt there is a need for educating nurses on management of snake bite³

2. LITERATURE REVIEW:

MT Alam et al [Jan 2014] carried out a study to assess the common type of snakes in local area with clinical presentations of snake bite patients in Faridpur, India. Fifty cases of snakebite patients in medicine wards of Faridpur Medical College Hospital from 1st January 2012 to 31st April 2013 were studied. Among 50 snake bite patients 35 (70%) were male and 15 (30%) were female. Among them 30 (60%) were venomous and 20 (40%) snake bite cases were non-venomous. The common victims were farmers (53%) and housewives (13%). The bites were commonly encountered during rural foot walking (32%) followed by sleeping (15%). 55% were bitten during outdoor and agriculture related activities. 65% had sustained bite in lower limbs.⁴

A study was conducted to assess the clinical characteristics, factors involved in complications and the outcomes in relation to timing of polyvalent snake antivenom (SAV) administration in patients with snakebite envenoming in Kerala, South India. The Results shows that (34%) of 586 cases with snakebites had envenoming; 93.5% had signs of local envenoming. Regional lymphadenitis occurred in 61%. The mortality rate was 3%. Capillary leak syndrome, respiratory paralysis and intra cerebral bleeding were the risk factors for mortality. Those who received SAV early (bite to needle time <6 h) had more severe local envenoming than those who received SAV late (bite to needle time >or =6 h), but the latter group were more likely to suffer complications. 39.5% had complications, with acute renal failure being the most common (25.5%). Those who received SAV late had a higher risk of developing acute renal failure. Higher rates of complications were seen in those with severe coagulopathy (OR = 8.0), leuco cytosis (OR = 3.7) and those who received SAVlate.⁵

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A cross sectional study on awareness of snake bite and its first aid management in rural areas of Maharashtra was conducted in 2011-12. The objective was to study the knowledge about the types of snakes and their identification and to ascertain the knowledge about first aid. The study was carried out in 10 adopted villages under Rural Health Training Centre, from July 2011 to June 2012. Out of 2272 households, a proportionate sample was selected and one representative from each household was further selected at random. The awareness about first aid measures was less in all subjects but the knowledge about symptoms of snake bite was higher in majority of subjects. It was observed that knowledge about types of snakes was significantly higher in 12-20 years of age group ($p < 0.05$). Out of 49 survived cases of total 68 cases, 8 cases were given wrong first aid. Use of sucking of blood was practiced in few cases. In most of the cases the nearest health facility is not in a reachable distance, taking more than 30 minutes to reach and no transport facility is available to reach nearest health centre. Hence, in order to prevent untimely death, there is a need to provide knowledge regarding first aid treatment of snake bite to the villagers.⁷

3. MATERIALS AND METHODS:

The research design selected for the study was one group pre-test- post-test design. The sample consisted of 50 staff nurses of Little Flower Hospital and staff nurses who have at least 6 months of clinical experience meet the inclusion criteria.

TOOLS AND TECHNIQUE

In this study two tools were used. First tool consisted of a personal data sheet to assess the socio demographic variables of the subject. It consists of five items including age, gender, education, duration of clinical experience, area of clinical

experience. The second tool was the structured knowledge questionnaire consisting of 25 items from the area of Identification of venomous bites Epidemiology, Symptoms, given a score of one. Each wrong answer carry '0' marks. The total score was 25. In this study, purposive sampling technique was used for the study.

VALIDITY AND RELIABILITY

Content validity of tool was established by four experts and two senior physicians in the field of medicine and nursing. Reliability of the tool was tested by using split half technique. The reliability for knowledge questionnaire was 0.79.

ETHICAL CONSIDERATION

The ethical consent was obtained by the ethical committee and get permission from the high authorities of Little Flower Of Hospital ,Angamaly.Data collection was conducted for 10 days at Little flower hospital and research centre, Angamaly. The data collection started on 25-4-2017 and ended on 3-5-2017. Pre- test was conducted on 25-4-2017 to 50 staff nurses. Then self-instructional module was given to staff nurses. The post- test was collected on 3-5-2017.Informed consent was obtained from the consent participant. The investigator introduced herself to the subject and explained by the purpose of the study. There were assured that all data should be get confidential and would be used only for the study purpose. The data was collected by using self-report technique. Each tool was administered by 45 minutes. The data collection process was terminated after thanking each of the subject for the help and co-operation.

4. ANALYSIS AND FINDINGS:

The data was tabulated, analyzed and interpreted using descriptive and inferential statistical methods. The data presented under following headings;

Section I - Description of demographic variables of staff nurses

Table 1: Frequency and percentage distribution of subjects according to Gender, Area of clinical experience and professional education

Demographic Variables	Frequency (f)	Percentage (%)
Gender		
Male	3	6%
Female	47	94%
Areas of experience		
Medical ICU	13	26%
Medical ward	17	34%
Surgical ward	4	8%
Others	16	32%
Professional Education		
GNM Nursing	43	86%
B Sc Nursing	6	12%
Post Basic B Sc Nursing	1	2%
M Sc Nursing	0	0

This indicates that most of the sample (94%) were females. About 34% of staff nurses were from medical ward. The above table reveals that 86% staff nurses possess the professional education of General nursing and midwifery.

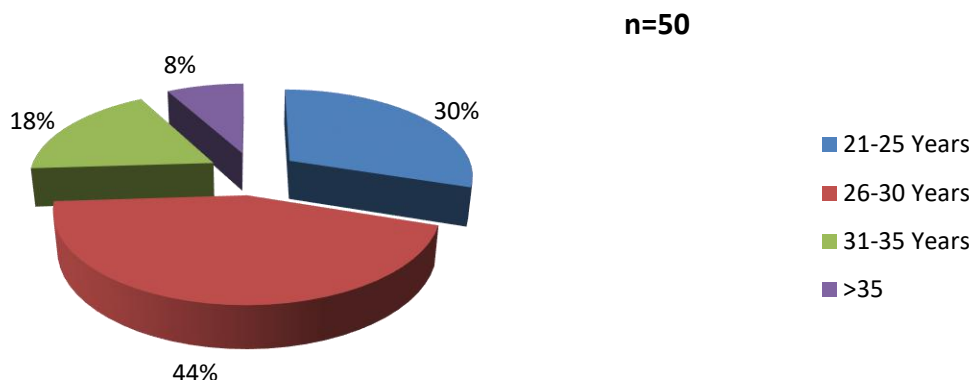


Figure 1 : Pie diagram showing the age wise distribution of staff nurses
 The above diagram shows that majority (44%) of staff nurses are in the age group of 26-30 years and only 8% was in the age group of >35 years.

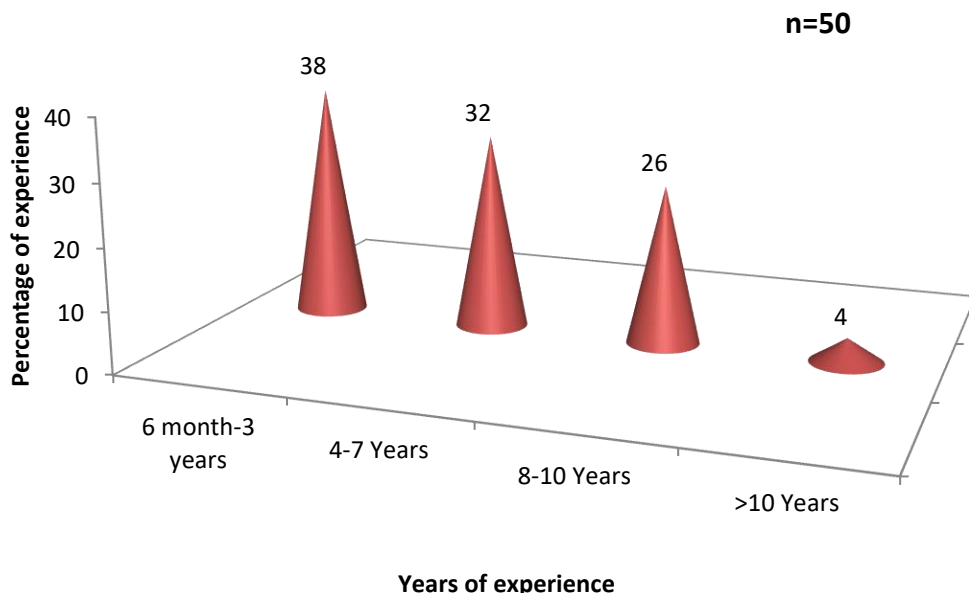


Figure 2: Percentage distribution of subjects according to total years of experience as a staff nurse
 Figure 2 depicts that the staff nurses are distributed as 38% in less than four years of experience group whereas 62% of them have more than four years of experience as a staff nurse

Section II: Description of level of knowledge of staff nurses regarding management of patients with snake bite

Table 2
Mean, median, range and standard deviation of pre and post-test knowledge scores of staff nurses regarding management of patients with snake bite

(n=50)				
Knowledge	Range	Mean	Median	Standard deviation
Pre- test	11-23	17.84	11	3.16
Post- test	15-23	20.04	17	2.53

Table 2 shows that the mean pretest knowledge score of nurses regarding snake bite was 17.84 with a standard deviation 3.16 whereas the mean posttest score was 20.04 with a standard deviation of 2.53. In the pretest median of knowledge scores was 11 whereas in the posttest median of knowledge score was 17.

Table 3
 Frequency and percentage distribution of pre and post-test levels of knowledge of staff nurses regarding management of patients with snake bite

Level of knowledge	Pre-test		Post- test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Excellent (20-25)	18	36%	34	68%
Good (15-19)	24	48%	16	32%
Average (11-14)	8	16%	0	0
Poor (<10)	0	0	0	0

The data presented in table 3 reveals that, in the pretest 36% staff nurses had excellent knowledge and only 48% had good knowledge whereas in post-test 68% attained excellent knowledge and 32% had good knowledge. None of them was included in the poor category

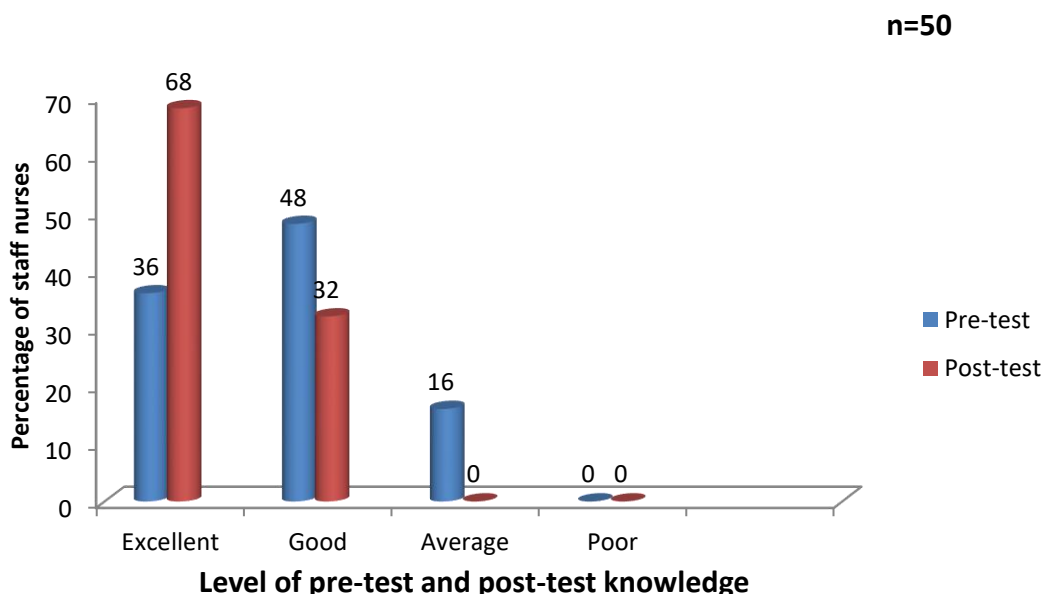


Figure 3: Frequency and percentage distribution of pre-test and post-test knowledge scores of staff nurses regarding snake bite

Figure 3 shows that in the pre-test 36% had excellent level of knowledge whereas in post-test 68% had excellent level of knowledge regarding snake bite. In the pre-test, 16% had average knowledge whereas in the post- test no one had average or below knowledge.

Section III Effect of SIM on management of patients with snake bite

Table 4

Paired ‘t’ test computed between pre and post –test knowledge scores of staff nurses regarding snake bite (n= 50)

Knowledge	Mean	SD	Mean Difference	t value	df	p-value
Pre-test	17.843	16	18	13.83	49	P<.01
Post-test	20.042	53			49	P<.01

Table 4 shows that the p-value is less than 0.05 level of significance. So the null hypothesis H_{01} is rejected. Hence it is inferred that there is a significant difference between mean of pre and post-test knowledge scores of staff nurses.

Section IV: Association between pre-test knowledge of nurses regarding snake bite and selected demographic variables

Table 5

Fisher's exact test for association between pre-test level of knowledge of staff nurses regarding snake bite and selected demographic variables such as age and qualification

(n=50)

Age in years

Demographic variables	Level of knowledge			df	Fisher's Exact value	p-value
	Poor	Average	Good			
21-25	2	8	5	6	2.78	p<.01
26-30	3	10	9			
31-35	2	5	2			
Above 35	1	1	2			
Professional education						
GNM Nursing	7	21	15	4	2.78	p<.01
B.Sc Nursing	1	2	3			
Post Basic B.Sc Nursing	0	1	0			
M.Sc Nursing	0	0	0			

Table 5 shows that the p-values are less than 0.05 level of significance. So the null hypothesis H_{02} is failed to be rejected, which inferred that there is significant association between level of knowledge of staff nurses regarding snake bite and demographic variables such as age and professional education

Table 6

Fisher's exact test for association between pre-test level of knowledge of staff nurses regarding snake bite and selected demographic variables such as duration and areas of

Clinical experience

(n=50)

Duration of experience

Demographic variables	Level of knowledge			df	Fisher's Exact value	p-value
	Poor	Average	Good			
6 month-3 years	5	8	6	6	7.87	p<.01
4-7 years	1	7	8			
8-10 years	1	9	3			
>10 years	1	0	1			
Area of experience						
Medical ICU	0	7	6	6	16.87	p<.01
Medical ward	4	12	1			
Surgical ward	0	2	2			
Others	4	3	9			

Table 6 shows that the p-values are less than .01 level of significance. So the null hypothesis H02 is failed to be rejected, which inferred that there is no significant association between level of knowledge of staff nurses regarding snake bite and demographic variables with regard to total years and areas of experience

5. Result :

Section I: Description of Demographic variables of staff nurses

The result shows that majority (44%) of staff nurses belongs to the age group of 26-30 years .Out of 50 staff nurses, most of the staff nurses (94%) were females. In case of the area of experience, among 50 staff nurses, 34% had medical ward experience and 8% of staff nurses had surgical ward experience. Majority (38%) of staff nurses had less than 3 years of experience

Section II: Description of Level of knowledge of nurses regarding management of patients with snake bite

In the pre-test, only (36%) of staff nurses had excellent knowledge regarding snake bite whereas in the post-test most (68%) of staff nurses attained excellent knowledge. In the pre-test, 48% of staff nurses had good knowledge whereas in the post-test it was reduced to 32% as many of the staff nurses moved to excellent category. In the pre-test, 16% of staff nurses had average or below average knowledge where as in post-test none of them had average or below average knowledge. Mean pre-test knowledge score was 17.84 with a standard deviation of 3.16 whereas the mean post-test knowledge score was increased to 20.04 with a standard deviation of 2.53.

Section III : Effect of SIM on management of patients with snake bite

The findings of present study show that the mean post-test knowledge score (20.04) is greater than the mean pre-test knowledge score (17.84). It indicates that the self- instructional module is effective in improving the knowledge of staff nurses regarding management of snake bite. Paired ‘t’ test was used to test the effect of self-instructional module on knowledge regarding management of snake bite. The calculated p value (.01) is less than 0.05 level of significance. Hence there is significance difference in the pre and post-test level of knowledge of staff nurses regarding management of snake bite. It indicated that the self-instructional module was effective to enhance the knowledge of staff nurses on management of snake bite.

Section IV: Association between pre-test knowledge of nurses regarding snake bite and selected demographic variables

The Fisher’s exact probability test was computed between pre-test knowledge score and demographic variables such as age, professional education, duration of clinical experience and area of clinical experience. The present study showed that there isa significant association between level of knowledge of staff nurses regarding snake bite and demographic variables such as age and professional education whereas there was no significant association between level of knowledge and demographic variables such as total years of experience and area of experience.

6. DISCUSSION:

In the pre-test, only (36%) of staff nurses had excellent knowledge regarding snake bite whereas in the post-test most (68%) of staff nurses attained excellent knowledge. In the pre-test, 48% of staff nurses had good knowledge whereas in the post-test it was reduced to 32% as many of the staff nurses moved to excellent category. In the pre-test, 16% of staff nurses had average or below average knowledge where as in post-test none of them had average or below average knowledge. Mean pre-test knowledge score was 17.84 with a standard deviation of 3.16 whereas the mean post-test knowledge score was increased to 20.04 with a standard deviation of 2.53.

The findings of the present study were consistent with another study conducted by Joseph N (June 2011) about Knowledge of First Aid Skills among Students of a Medical College in Mangalore City of South India. The aim of this study was to assess the level of knowledge of medical students in providing first aid care. This study was conducted during May 2011 among 152 medical students. Data was collected using a self-administered questionnaire. Based on the scores obtained in each condition requiring first aid, the overall knowledge was graded as good, moderate and poor. The result showed 11.2% (17/152) of the total student participants had previous exposure to first aid training. Good knowledge about first aid was observed in 13.8% (21/152), moderate knowledge in 68.4% (104/152) and poor

knowledge in 17.8% (27/152) participants. The level of knowledge about first aid was not good among majority of the students. There is thus a need for formal first aid training to be introduced in the medical curriculum.⁸

7. RECOMMENDATIONS

- Descriptive survey can be conducted on symptomatology and management of snake bite
- A study can be conducted to assess the practice of staff nurses regarding antivenom administration.

8. CONCLUSION:

This study was conducted to assess the effect of self-instructional module for staff nurses on management of snake bite. This study concluded that self-instructional module was effective in improving knowledge of staff nurses on management of snake bite. The study also indicates that there was significant association between knowledge of staff nurses and selected demographic variables such as age, educational qualification and there was no significant association between knowledge and demographic variables such as years of experience and areas of experience.

REFERENCES:

1. <http://www.Snaketype.com/facts-about-snakes/Factsaboutsnares>.
2. Warrel D.; Guidelines for management of snakebite.2016 [cited on 2016 Apr 28];20(2):93-8.Available from: URL: <http://apps.searo.who.int/pdf>.
3. Subramanian S.; India snakes kill 46,000 a year.2016 [cited on 2016];23(3):298-308. Epub 2016 Oct 17. Available from: URL: <http://www.international.ac/world/south-asia/india-snakes-kill-46000-a-year>.
4. M.T.Alam.; A study of snakebite cases in Faridpur Medical College Hospital [cited January 2014];46(5);56-58.Available from: [http:URL://www.banglajol.info](http://URL://www.banglajol.info)
5. Suchitra N.; Snakebite envenoming in Kerala, South India: Clinical profile and factors involved in adverse outcomes [cited2008].2007July7;34(4):2007. Available from: URL:<http://emj.bmj.com/contents/25/4/200>
6. Mostafa.S. ; Snakebite management in Iran: Devising a protocol[online]. [cited 2014May24];23(2):2014. Availablefrom:URL:<http://www.ncbi.nlm.nih.gov/pmc/articles/pmc3999602>
7. ChulinC.A.; Survey of Snakebite knowledge among field forces in China.[cited 2016].2015May7;34(5):2015. Available from: URL:<http://www.mdpi.com/16604601/14/1/15/pdf>
8. Kounteya; . Snake bites kill 46k in India yearly.2011[cited on 2011];34(4):342-344.Available from: URL:<http://www.timesofinda.indiatimes.com/india/snakebite>