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ACQUISITION AND RETENTION OF KNOWLEDGE REGARDING NIPAH VIRUS INFECTION AMONG UNDERGRADUATE NURSING STUDENTS IN MADHYAPRADESH, INDIA

Nursing

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ABSTRACT

Introduction & background: Nipah virus infection is a fatal infection of epidemic potential that can be transmitted through animal to human or human to human route. India has witness the outbreak of the disease in the past in some states. In absence of definitive treatment and vaccine it is important to assess the knowledge of nursing students regarding Nipah virus infection.

Material and methods: In this preexperimental study 60 undergraduate nursing students were selected conveniently from a selected nursing college in Bhopal, Madhyapradesh.

A 30 items structured questionnaire was used to assess of knowledge of undergraduate nursing students regarding Nipah virus infection. Pretest was conducted before structured teaching programme followed by post test 1. Post test 2 was conducted 7 days after the training to assess retention of the knowledge.

Result: Majority of students (76.67%) belonged to the age group of 18-24 years and were female (95%). More than half of the students (55%) were studying in Post Basic BSc Nursing course followed by (45%) in B. Sc. Nursing course. All of the students (100%) had no previous exposure to knowledge regarding Nipah virus. In the pre-test, 90% of the students had average knowledge followed by 6.67% had poor knowledge. The mean pretest knowledge score was 14.91±3.23 that is less than the 50% of the maximum score. In the post-test I, 61.67% of the students had good knowledge followed by 38.33% had average knowledge. However, in post-test II, 53.33% of the students had good knowledge followed by 45% had average knowledge. The B.Sc. Nursing students scored significantly higher compared to Post basic B.Sc. Nursing Students in Posttest II.

Conclusions: The study showed that structured teaching programme was effective to enhance the knowledge of nursing students regarding Nipah virus infection and they were able to retain the knowledge after 7 days of training.

KEYWORDS

Nipah Virus infection, Knowledge, Nursing Students

INTRODUCTION & BACKGROUND

Nipah virus was first isolated and identified in 1999 in Malaysia (Sungai Nipah village) and Singapore, during an outbreak of encephalitis and respiratory illness among pig farmers[1-3]. It is a zoonotic RNA virus that belongs to the family Paramyxoviridae and genus Henipavirus, whose reservoir host is fruit bats of the Pteropodidae family[2].

First outbreak of Nipah virus in India occurred in Siliguri in January and February 2001 in which 66 human cases were reported and 45(68%) were died. Second outbreak in India occurred in the year 2007 which reported 5 cases and all died. During 2018, 19 cases were identified in Kerala out of which 17 were died. In 2019 outbreak, only a single non fatal case of Nipah virus infection was reported in Kerala.[1-3]

The main bearer of Nipah virus infection is fruit bats and the infection is spread by sweat, saliva, urine, and blood of them. The pig populations are getting infected by fruit bats this is because of the eating the fruit and also drinking water infected by bats. Therefore, those who are engaged with pigs or living with pig farmers are very vulnerable to get this infection[2-3].

Studies reported that almost all age group peoples are prone to get this infection. Increasing age and respiratory symptoms are indicators of infectivity of Nipah virus[4]. In Singapore and Malaysia, humans were allegedly infected by close contact with infected pigs. On the contrary, person to person transmission of Nipah virus is frequently reported in India and Bangladesh.

It requires direct contact with an infected source for its spread. The period of incubation ranges from 6 to 14 days however; it may be as long as 45 days[5]. World Health Organization has added Nipah virus infection to its list of "priority diseases" along with more well-known conditions like Ebola, Zika, and SARS.[6-7].

After the infection patient may suffer from severe headache, fever, vomiting, sore throat, and myalgia with altered sensorium and mental confusion. These symptoms may advance to coma within 24-48 hours that may eventually lead to death of the patient. Even after complete recovery, persistent convulsions and personality changes are residual neurological consequences which are present in about 20% of the patients.

It is difficult to diagnose when the patient is in initial stages of Nipah virus infection as it is asymptomatic at first. Real time polymerase chain reaction from body fluids may be useful diagnostic test in the early stages of infection. Enzyme linked immune sorbent assay may be undertaken later on to detect antibody. The management aspects include the use of drug Ribavirin to alleviate the symptoms of nausea, vomiting, and convulsions[8] and passive immunization by human monoclonal antibody targeting Nipah G glycoprotein.

Nursing students are the part of health care delivery system and they spend a lot deal of time in clinical settings as per the requirement of curriculum. The undergraduate and postgraduate nursing curriculum lacks in the information about Nipah virus infection which increases the susceptibility of this population to get this infection.

Shrestha A et al[9] reported that 44.4% nursing students had adequate knowledge about Nipah Virus infection whereas 55.6% had inadequate knowledge in pretest. Hereby after educational intervention the entire respondent had adequate knowledge regarding Nipah virus infection. Similarly, Binub K[10] also reported that medical students had good attitude and 50% of them had good knowledge about the disease. Most of the students have been aware about the virus through social media (40.5%) as a major source of information followed by news paper or news (34%), (17.5%) internet and (8%) by awareness programme. Varghese AD et al[11] reported that 65.5% of the health care workers were found to have good and 34.3 % had poor awareness regarding Nipah virus infection. The highest level of awareness was observed among doctors (89.2%) followed by laboratory staff (83.3%) and nurses (61%). Ammu KJ al[12] assessed the knowledge regarding Nipah virus disease among 200 undergraduate students and found that 21% students have poor knowledge and 79% have average knowledge about Nipah virus disease.

According to the World Health Organization data the mortality rate of Nipah virus infection is 75% worldwide. It has caused death of 17 people in Kerala, India in the year of 2018 including a nurse[2,3]. Considering the high fatality of this infection and the fact that there is no proven treatment and vaccine till date it is crucial to assess the knowledge of undergraduate nursing students regarding Nipah infection and to provide them ample information about it which may help them to prevent possible infection with Nipah virus in home and clinical setting.

Since there is paucity of research work in this direction therefore, present study was undertaken to evaluate the effectiveness of structured teaching programme on knowledge regarding Nipah virus infection among nursing students.

MATERIALAND METHODS

This quantitative experimental study was conducted using pretest post test design. The study was conducted at Bhopal Nursing College, Bhopal Memorial Hospital and Research Centre (under ICMR), Bhopal. The population under study was Undergraduate nursing students of the selected college. Sample of the study was drawn using convenience sampling technique. A total of 60 undergraduate nursing students were selected for the study.

Those undergraduate student nurses who were willing to participate, available during the period of data collection and were able to understand English were included in the study. A structured questionnaire was used to assess the knowledge regarding Nipah virus infection. The Questionnaire is divided into 2 sections; Section A consists of item related to sociodemographic data and Section B consists of 30 multiple choice questions related to Nipah virus infection. One mark was awarded for each correct answer and score range was 0-30. Scoring of marks was done as following; 1-10: Poor; 11-20; Average and 21-30; Good. Content validity of the tool was established by 10 experts in the field of nursing and medicine. Test retest reliability coefficient was 0.836. Pretest was conducted before structured teaching programme followed by post test 1. Post test 2 was conducted 7 days after the training to assess retention of the knowledge. Written permission was obtained from the institutional ethics committee to conduct the study (IEC/22/Nursing College/19).

RESULT

Table 1: Sociodemographic Profile of Nursing Students

N=60

Sociodemographic Variables	f	%
Age in years		
18-24	46	76.67
25 and above	14	23.33
Gender		
Male	03	05.00
Female	57	95.00
Course of the study		
B. Sc Nursing	27	45.00
Post Basic B.Sc. Nursing	33	55.00
Year of the study		
First Year	33	55.00
Second year	00	00.00
Third year	00	00.00
Fourth year	27	45.00
Marital status		
Married	05	08.33
Unmarried	55	91.67
Previous exposure to knowledge		
Yes	0	0
No	60	100

The majority (76.67%) of the nursing students belonged to age group of 18-24 years and were female (95%). More than half of the students (55%) were studying in Post Basic B. Sc Nursing course followed by (45%) in B. Sc. Nursing course. Only 8.33% of the students were married and all the students (100%) had no previous exposure to knowledge regarding Nipah virus.

As depicted in figure 1 90% of the students had average knowledge followed by 6.67% had poor knowledge in the pre-test. In the post-test I, 61.67% of the students had good knowledge followed by 38.33% had average knowledge. However, in post-test II, 53.33% of the students had good knowledge followed by 45% had average knowledge.

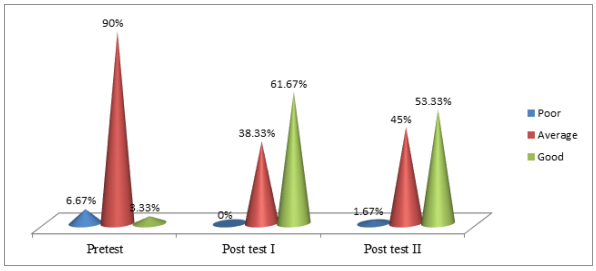

Figure 1: Percentage distribution of students as per level of knowledge in pretest, post test I and posttest II

Table 2: Comparison of mean pretest v/s posttest I Knowledge Score among nursing students regarding Nipah Virus

N=60

Knowledge score	Pretest		Posttest I		t Statistics
	Mean	SD	Mean	SD	t=9.06
	14.91	3.23	22.71	5.83	P=**0.0001****

As shown in table 2 mean knowledge score was 14.91±3.23 in the pretest that is less than the 50% of the maximum score. The mean post-test I score was 22.71±5.83. T statistics revealed that p value was less than 0.05 that means teaching programme was effective to enhance the knowledge of the students.

Table 3: Comparison of mean Posttest I v/s posttest II Knowledge Score among nursing students regarding Nipah Virus

N=60

Knowledge score	Posttest I		Posttest II		T Statistics
	Mean	SD	Mean	SD	t=1.79
	22.71	5.83	20.98	4.68	P=0.14

In the post-test I, the mean score was 22.71±5.83 whereas in post-test II the mean score was 20.98±4.68. T statistics revealed that p value was more than 0.05 that means students were able to retain the knowledge regarding Nipah virus infection after one week of intervention.

Table 4: Association of selected variables with post test II Knowledge Score

N=60

Selected Variables	Knowledge Score		T Statistics
	Mean	SD	
Age			
18-24 Years	20.82	4.56	t=1.33
25 and above	18.92	4.96	P=0.18
Gender			
Male	18.33	1.52	t=0.77
Female	20.49	4.77	P=0.44
Course of study/Knowledge			
B. Sc Nursing	23.59	3.24	t=6.09
Post Basic B.Sc. Nursing	17.75	4.02	P=0.0001**
Year of study/Knowledge			
First Year	17.75	4.02	t=6.09
Fourth year	23.59	3.24	P=0.0001**
Marital status			
Married	18.20	2.86	t=1.08
Unmarried	20.58	4.79	P=0.28

The association of post test knowledge score with selected variables explored that B.Sc. Nursing students scored significantly higher compared to Post basic B.Sc. Nursing Students. Similarly, fourth year students scored significantly higher than their first year counterparts. No significant association was found between post test knowledge score and other selected variables.

DISCUSSION

In present study, female students outnumbered males. On contrary, Suchitra AR[13] reported male student's dominance in her study. In the present study, majority of students (76.67%) belonged to the age group of 18-24 years and all the students didn't have previous exposure to knowledge regarding Nipah virus. Similarl findings has been reported

by previous researchers.[9,10,13] In the pre-test, 90% of the students had average knowledge followed by 6.67% had poor knowledge. In the post-test I, 61.67% of the students had good knowledge followed by 38.33% had average knowledge. Other researchers[9,10,13] also reported that teaching/training was effective to enhance the knowledge of students of various fields including nursing. Aayoushma Shrestha et al[9] reported that 44.4% of the respondents had adequate knowledge and 55.6% had inadequate knowledge in pretest. After expose to awareness programme there was increase in the knowledge of the respondents. However, none of previous studies has assessed the retention of knowledge but the present study explored that students were able to retain the acquired the knowledge. Considering the facts that Nipah virus infection is fatal and there is no vaccine available to prevent the infection it's the awareness that may be beneficial to protect the nursing students from this deadly infection during periodic outbreaks.

Recommendations

- Similar study can be conducted on large population involving students from various streams
- Similar study can be conducted using virtual platforms or innovating teaching learning medium.

Nursing Implications:

- Nipah virus infection should be incorporated in to nursing curriculum.
- Refresher courses/ seminar can be organized for the same

CONCLUSION

The results indicates that the structured teaching programme was effective in enhancing the knowledge of undergraduate nursing students regarding Nipah virus infection as well as students were able to retain the same after a week.

Conflicts of interest: None

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