

Nurses' Preparedness regarding Emerging Infectious Diseases (EID) in Selected Hospitals of Maharashtra (India)

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Abstracts

Covid-19 outbreak is spread all over the world. It is important that all nurses including healthcare professional be prepared to care for people affected by such emerging Infectious Diseases (EID). Research approach adopted was exploratory survey method. Research hypothesis (Ho) is healthcare preparedness about Emerging Infectious Diseases (EID is independent of cadre of nurses. Convenient sampling method was used. The study was conducted during May 2020 across (Maharashtra). The total 180 nurses of various cadres were participated in online survey. Semi structured questionnaire was prepared with 30 questions on preparedness of nurses. However, overall preparedness level was found satisfactory, still there was gap in preparedness. Preparedness level of Emerging Infectious Diseases (EID is independent of cadre of nurses. (Ho) To test this we applied standard F test for collective comparison of means using ANOVA table. Since the computed F ratio is less than the table value the mean, preparedness level of four cadres does not differ significantly accepting null hypothesis (Ho).

Key Words: Nurses, Pandemic COVID-19, Biological disasters, Preparedness, Abilities

Background

Infectious Diseases are occurring more frequently in India and around the world¹. Severe Acute Respiratory Syndrome (SARS), Swine Flu outbreak, Pandemic Influenza and now COVID-19 these emerging infectious diseases (EID) becoming threats to mankind across the globe. In the corona virus pandemic health care workers became warriors to help the patients suffering from acute infectious diseases. Nurses play significant role in caring the patients suffering from acute exacerbation of infectious diseases. **EID** have devastating results due to inadequate preparation, the latest being the Covid-19 corona virus outbreak². In India particularly Maharashtra it is observed that, there is shortage of equipment, and supplies, poor infection control guidelines, shortage of nurses. Since calamities are unavoidable. Efforts have to be made to withstand the aftermath of catastrophes. Recent corona virus outbreak have shown how unprepared we are to tackle extreme **Emerging Infectious Diseases**. According to study done especially on Indian conditions, epidemics have killed millions of people. Nurses' preparedness is

highly important in reducing the ill effects of infections and improves the recovery of the patient³

During Emerging Infectious Diseases (EID) outbreak, health care workers and nurses can play a significant role in caring for people. Thus, preparedness is important for nurses. Nurses' working in clinical areas should acquire knowledge and practices skills needed to respond to such situations⁴. Based on all above facts the investigator felt the need of exploring the healthcare preparedness in regards to their knowledge and self-expressed practices among the nurses regarding Emerging Infectious Diseases⁵

A researcher was interested in finding related to nurses and health care preparedness in relation to their knowledge, practices to tackle infectious disease outbreak. Researcher was interested in finding the answers to the following⁶

1. Do nurses adequately prepared in regards to knowledge and self-expressed practices related to Emerging Infectious Diseases

2. Do their knowledge and self-expressed practices regarding preparedness is associated with socio-demographic factors

Methodology

Research approach adopted was online exploratory survey method. Convenient Sampling method was used. The study was conducted during May 2020 across state of Maharashtra. The total 180 nurses of various cadres (Nurse Educator, Head Nurses, Senior staff Nurses and Junior staff nurses) were participated from more than 10 cities of Maharashtra. Semi structured questionnaire was prepared with 30 questions regarding knowledge and self-expressed practices about emerging infectious diseases, Infectious disease. Questionnaire includes knowledge related to prevention, causes, transmission, government policies, adequacy of the equipment, training related to EID, future practices and resources available in healthcare organization related to patient care.

Questionnaire

Emerging Infectious Disease (EID) questionnaire was prepared to measure nurses’ knowledge and self-

expressed practices. Questionnaire was duly validated by experts in the field including nursing and public health. Questionnaire included 30 items A close-ended schedule was administered. Tool consists of two sections. Section I: Demographic Profile Form Section II: **Emerging Infectious Diseases (EID)** Knowledge and Self-Expressed practices Semi structured questionnaire duly validated by experts. Each correct answer to the question was given one mark and incorrect answer was given zero mark. The level of preparedness was classified based on correct responses viz. Poor (0-10), Good (11-20), Excellent (21-30). Data were analyzed by using standard statistical techniques of analysis.

Results and Discussion

According to Table 1. The majority of the respondents were female 120 (67%) as nursing profession consist of majority female population, Mean age of Junior Nurses was 21 years, and mean age of staff nurse were 28 yrs. Mean age of Head Nurses and Nurse Educator was 36 years. The majority of the nurses 120 (67%) was working in a medical surgical setting. and 100% respondents were working currently in clinical area.

Table – 1 : Distribution of Subjects

Subjects	Male	Female	Total	%
Nurse Educators	27	18	45	25
Head Nurses	0	45	45	25
Senior Staff Nurses	18	27	45	25
Junior Staff Nurses	15	30	45	25
Total	60	120	180	100
%	33.33	66.67	100	

Section I : Level of Preparedness – Total 30 questions were asked to the 180 participants through online survey method following are the observations

Table 2 : Frequency distribution and percentage of samples according to level of preparedness

Preparedness Score	Nurse Educators	Head Nurses	Senior Staff Nurses	Junior Staff Nurses	Total	%
Poor (0-10)	6	9	9	9	33	18
Good (11-20)	6	12	12	6	36	20
Excellent (21-30)	33	24	24	30	111	62
	45	45	45	45	180	100

Fig. 1 Percentage of samples according to level of preparedness

According to table 2 and Fig1 : Overall preparedness level of Nurses is good but looking at table 2 it is seen that 62 % nurses are in excellent category of preparedness while 38 % nurses are yet to prepare for infectious diseases. It is interpreted that though their level of preparedness is satisfactory but there are gaps in their level of preparedness.

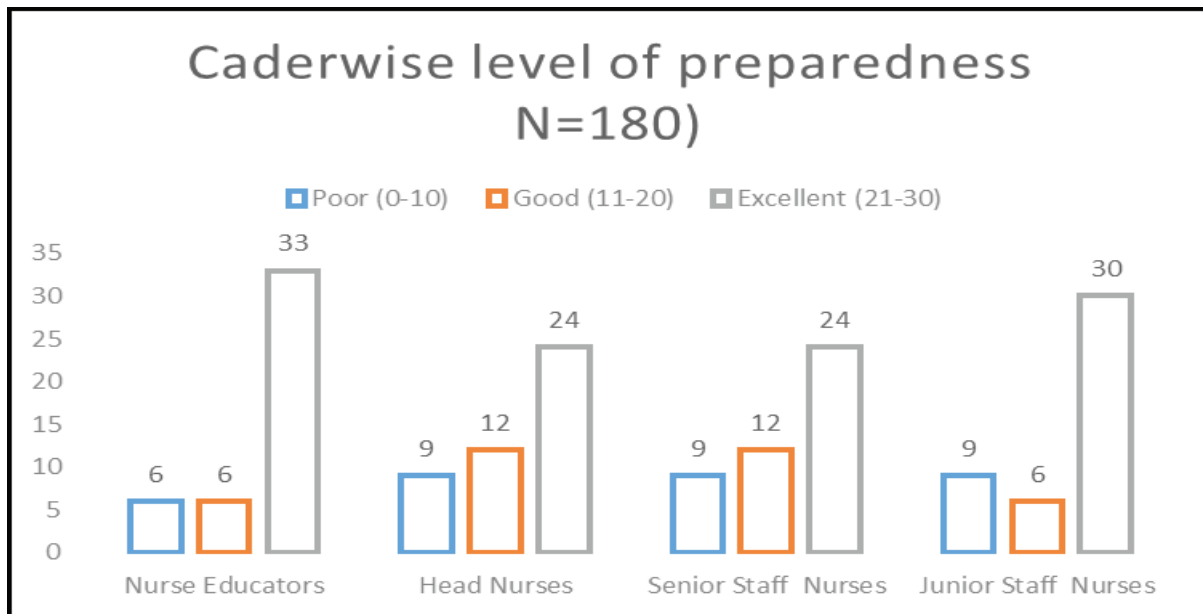


Fig. 2 Caderwise level of preparedness among nurses

The Fig. 2 depicts that Nurse Educator’s and Junior Staff nurses’ preparedness level is better than head nurse and senior staff nurses. However, nurse educator’s preparedness is at optimum, followed by junior staff nurse and senior staff nurses

Section II : Knowledge level of nurses

The knowledge and self-expressed practices were assessed using semi-structured questionnaire and following were observations

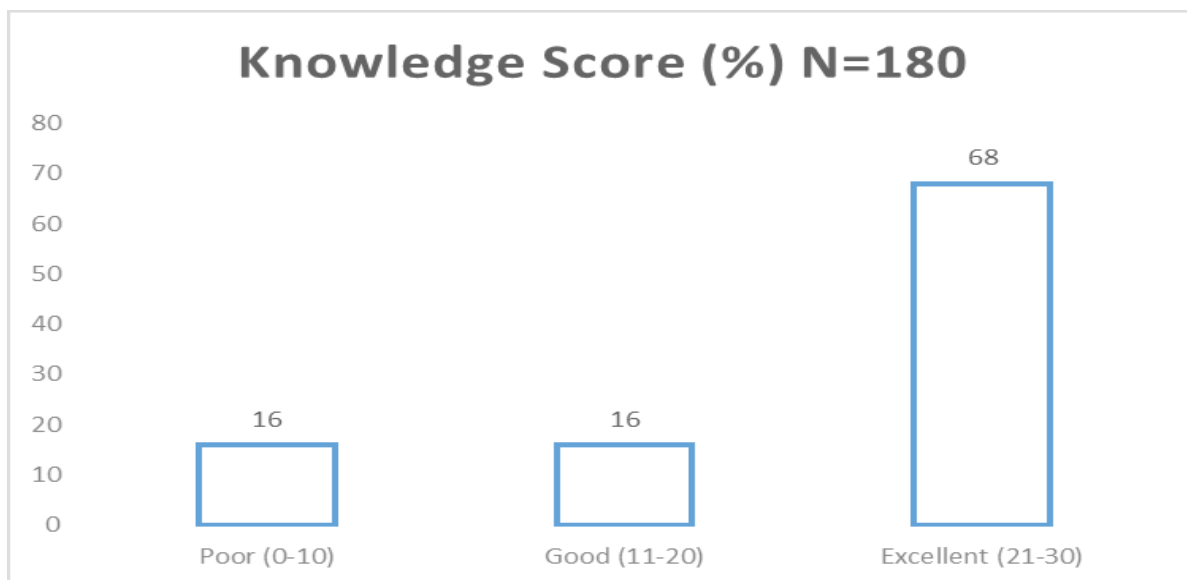


Fig. 3. Knowledge level of Nurses

The 15 questions were asked regarding knowledge and it was found that only 68% nurses identified in excellent category while 16 % nurses in were in poor and good category of level of knowledge.

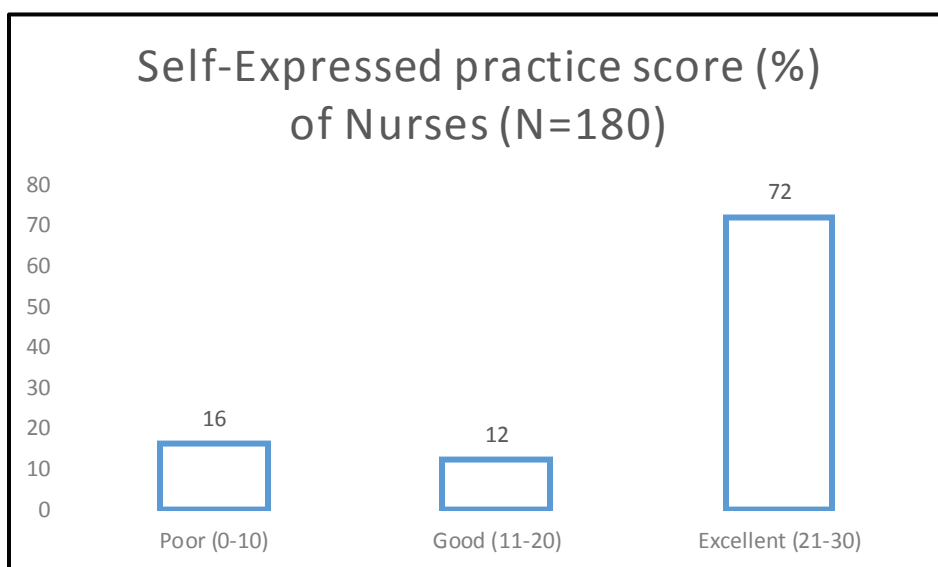


Fig. 4 Self-expressed practice score of Nurses

Simultaneously in self-expressed practices 72 % nurses found in excellent category and only 12 % found in Good and 16 % in poor category

Overall knowledge and practices of nurses found satisfactory but researcher found following major gaps in their knowledge and practices

1. The question was asked regarding training related to infection control guidelines, procedure or policies for the training schedule only 66% of the nurses stated that their hospital has written policies for the

training.

2. Core capabilities includes bio-safety, infection control guidelines, practices about PPE, bio-waste management, management of Isolation, Immunization, standard of care guidelines, emergency preparedness unfortunately nobody could answer all these components of capabilities.

3. Infection control committee is one of the important committee in hospitals but only 54% nurses answered presence of ICC.

4. Only 66% participants told that their hospital has testing services for selected communicable diseases.

5. Out of all 30 hospitals from where 180 participants responded from Maharashtra it was found that only 11 hospitals were accredited by NABH.

Section III : Association of findings with demographic variable

We tried to test the hypothesis (Ho) that preparedness about **Infectious Diseases (EID)** is independent of cadre of nurses. To test this we applied standard F test for collective comparison of means using ANOVA table.

Table 5 : Analysis of variance (ANOVA) table

Variance (square)	Degree of freedom	Sum of Square	Mean Sum of Square	F - Ratio
Between the cadre	4-1=3	39	13	0.68
Error	59-3=56	1066	19.04	

Computed 'F' ratio = $13 / 19.04 = 0.68$ table F value for 3 df and 56 df at 5 % level of significance = 2.76. Since the computed F ratio is less than the table value the mean preparedness level of four cadres does not differ significantly accepting our hypothesis (Ho).

On looking at the means for four cadres we find that preparedness level of nurse educators, head nurses, senior staff nurses and junior staff nurses does not differ significantly.

Discussion

Recent covid-19 outbreak across the world and in India made devastating effect on lives of the people recent statistics shown that there are more than 16 lakh people infected in India and 25000 died as on July 20, 2020⁷ This study was conducted to measure nurses knowledge and self-expressed practices for EID among nurses of Maharashtra State. The influx of the corona virus infected patients are visiting hospitals in large numbers⁸. The facilities, equipment, manpower, their skill was found below the expected level as evidenced by increasing death rates in the hospitals⁹. Since this kind of outbreak is found for the first time, healthcare workers and nurses are not prepared to tackle such a crisis¹⁰. Research found that knowledge of nurses regarding management of **Infectious Diseases (EID)** was reasonably good as 68 % found in excellent category but researcher found huge gap in the knowledge of nurses similar finding is observed in self-expressed practices.

In this study it was revealed that the level of preparedness of nurses is good, their knowledge level also found reasonable but their self-expressed practice was found below average. This study is supported by study conducted by Kalanlar and found that nurses and health care workers are poorly prepared to manage emerging infectious diseases¹². Hence it is suggested that every healthcare organization, government health agencies to identify the areas of capability buildings and enhance nurses knowledge and practices to manage the emerging infectious diseases¹³.

Implications to Nursing

1. Principles of Quarantine, identification of infected clients, Isolation, Notification, Drugs availability, Immunization, Diet, Basic Life Support (BLS) and Advance Cardiac life Support (ACLS) training programme may be included in each nursing programme.
2. INC recognized Disaster Nursing programme should be encouraged to vulnerable regions like Gujarat, Maharashtra, NE states etc.
3. Present curricula needs to be reformed looking into current emerging diseases.

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Conflict of Interest –Nil

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