

A DESCRIPTIVE CROSS-SECTIONAL STUDY TO ASSESS THE KNOWLEDGE AND EXPRESSED PRACTICES OF STAFF NURSES TOWARDS DISASTER PREPAREDNESS IN SELECTED HOSPITALS OF GURUGRAM

*¹Fazl Ur Rahman, Dr. Poonam Sharma² and Geetika Kayshap³

¹Amity College of Nursing, Amity University, Haryana, India.

²Associate Professor Department of Psychiatric Nursing, Amity College of Nursing, AUH, Haryana, India.

³Tutor, Amity College of Nursing, Amity University, Haryana, India.

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*Corresponding author: Fazl Ur Rahman

Amity College of Nursing, Amity University, Haryana, India.

ABSTRACT

Background: Disasters may be defined as "any destructive events that disrupt the normal functioning of a community". The increasing frequency of disasters worldwide necessitates nurses to adequately prepare to respond to disasters to mitigate the negative consequences of the event on the affected population. Despite growing initiatives to prepare nurses for any disasters, evidence suggests they are under prepared for disaster response and the importance of upstream readiness, a persistent challenge for public health practitioners is defining what it means to be prepared. There is a knowledge gap in that existing frameworks lack consideration for complexity relevant to health systems and the emergency context. **Aim:** This study is aimed to assess the level of nurses' knowledge and practices regarding disasters and emergency preparedness. **Methods:** Quantitative, descriptive, cross-sectional survey approach was used to assess nurse's knowledge and practices among 100 random staff nurses of selected hospitals of Gurugram by using socio demographic data sheet, Descriptive statistics and Chi square test. **Results:** In overall view of the present study findings; the mean percentage of the knowledge score was 69.8% and the mean percentage of the practice score was 66.5%. The study findings revealed that knowledge and practices of disaster preparedness was average level with highly significant differences $P \leq .000$. **Conclusion:** Based on the present study results; it can be concluded that the level of knowledge and practice were average regarding disaster preparedness and neutral familiarity with emergency preparedness were found. Thus, an integration of clearly titled theory and practice teaching courses about disaster preparedness into nursing curriculum are needed and provided in respect to their knowledge and training preferences. Further, follow up research are necessary for maximizing nursing education and nursing quality in these critical areas applied to healthcare and community setting.

KEYWORDS: Assess, disaster, preparedness, staff nurses, knowledge, practice, earthquake, selected hospitals.

INTRODUCTION

A disaster is an incident that can cause massive damage and disruption. Disasters are common worldwide occurrence now a days. These events have dramatically bad impact on many people, to kill and injure them, damage and destroy their houses, health system, and interrupt their lifeline. This is big loss of any county who face the disaster.

Florence's nightingale showed the world that nurses play leading role in front line of the disasters and public health. The public health nurses bring new skills and

knowledge in each phase of disaster like preparedness, response and rehabilitation. Nurses are the key person working in the hospital emergencies and any disasters and prepared a plan to prevent the hazards. During the disaster the first respondent are the nurses, who have enough knowledge and skill related to the disasters and disasters management.

Disaster preparedness is very much important for minimize the damaging effects of disasters and emergencies. Emergency preparedness is defined as appropriate knowledge, skills and action which are

required to respond and ready for threat which may be actually suspicious.

Disaster preparedness for nurses is also focused by the International Nursing Coalition for Mass Casualty Education (INCMCE) (2003) that said that overall world wide the nurses' knowledge and skill should be maximum to deal with different emergency situations. It is said that the nurses who are prepared for emergencies, can play better and efficient role in disasters. Disaster preparedness has 4 stages which are precaution, preparedness, response and rehabilitation. There is growing interest in the effectiveness of disaster preparedness in hospitals. Although several studies have examined staff nurses preparedness perceptions, a better understanding of factors that may influence actual preparedness is needed.

Disaster management does not avert or eliminate the threats; instead, it focuses on creating plans to decrease the effect of disasters. It is essential for an organization to include procedures for determining whether an emergency situation has occurred and at what point an emergency management plan should be activated.

World Disasters Report 2015 reported 317 natural disasters worldwide in 2014, affecting 94 countries. About 48% of all disasters occurred in Asia in 2014. Asia had a region that mostly effected by the disasters estimated that 90.13% of worldwide disasters come across the Asia.

Emergency preparedness is comprehensive skills, abilities, knowledge, and actions that are needed to respond and prepare for a threat, actual or suspected, chemical, radiological, nuclear, biological, or explosive in nature. During major disaster events, the demand for nursing staff is much greater than the demands for any other healthcare professionals. Nurses should anticipate an expanded role during disaster events to include caring for the sick and injured, infection control, contingency planning to prevent further damage, triage, mass immunizations, mass evacuations, and treatment for mass casualties.

The ICN Framework of Disaster Nursing Competencies are recognized an accelerated to present need to build capacities of nurses at all levels in order to "safeguard populations, limit injuries and deaths, and maintain health system functioning and community well-being, in the midst of continued health threats and disasters" India is a developing country and developing countries are more prone of disasters because lack of disasters preparedness.^[20] Disasters can be owing to natural events (such as storms, drought, earthquakes, and disease epidemic), or technological events (such as explosions, structure collapse, and radiological accidents) or civil/political events (such as strikes, terrorism, and biological warfare). Unfortunately, India is not only facing natural disasters but also under the influence of

terrorism. During 2015-16, a total of 1,025 terror attacks were recorded, resulting in hundreds of people dead and thousands of people injured. Terrorism is a major problem faced by the India that affects the basic structure of the country and lives of the citizens.

In 2009, the World Health Organization (WHO) and the International Council of Nurses (ICN) released the ICN Framework of Disaster Nursing abilities, which describes the basic skills and knowledge are necessary for the registered nurses to be think competent in disasters management.

Discuss in this study that there is need for further researches to determine the current knowledge of nurses regarding the emergency preparedness and should design the educational programs to enhance their knowledge and some educational program should be the part of their curriculum. Nurses plays very important role in the any disasters and emergency. The knowledge and practices of nurses also play key role in managing the disasters and in the preparedness of emergency.

Problem Statement

Disasters happen frequently now a days especially in Asia. India is the most probably exposed to being attacked of disasters due to its atmosphere and environmental factors. According to record India experience number of deaths due to natural disasters across India. In 2008 number of deaths were 3,746, in 2009 number of deaths were 3,746, in 2014 number of deaths due to disaster were 5,677 and thousands are under the influenced of disasters. It is observed through reading articles that there is limited preparedness and management plans in the government as well as private hospitals. Nurses has insufficient knowledge and practices regarding the disaster preparedness which is a week point of the staff nurses. There is no educational programme to enhance their knowledge and as well as their practices.

The research question of this study is that what is the knowledge and practice of nurses who are working in the emergency department about the disaster preparedness.

AIM OF THE STUDY

Disasters happen is to assess the level of staff nurse's knowledge and practices regarding disaster preparedness in the selected Hospitals of Gurugram.

The objectives of this study were: 1. To assess the knowledge of staff nurses regarding disaster preparedness. 2. To assess the expressed practices of staff nurses towards disaster preparedness. 3. To find out the association of knowledge with demographic variables. 4. To find out the association of practice with demographic variables. 5. To find out the correlation of knowledge and expressed practices of staff nurses regarding disaster preparedness.

METHODOLOGY

To conduct this study the Quantitative descriptive cross sectional study design was used. The research is conducted in 2 hospitals. Medanta Hospital- The Medicity (Sector 38, Gurugram, Haryana 122001) and Artemis Hospital Gurgaon (Sector 51, Gurugram, Haryana 122001). A Non probability Convenience Sampling technique was used. An online Self-administered questionnaire (SAQ) with close ended questions and Self-structured checklist (SSC) was developed by using Google forms. The link of the questionnaire was sent through e-mails, WhatsApp and other social media to the contacts of the investigators. The participants were encouraged to participate in the survey. Thus, the link was forwarded to staff nurses apart from the first point of contact and so on. As they receive the form by clicking the link, the participants got auto directed to the information about the study and informed consent. Initially they have given their consent for the survey and then filled the demographic variables. Afterwards, a set of several questions appeared sequentially, which the participants were to answer. Participants with access to the internet could participate in the study. The data collection was initiated on 28th February 2021 and closed on 2nd March 2021. I was able to collect 100 responses from the selected hospitals.

Inclusion criteria

- Staff nurses who are working in the selected hospitals in Gurugram.
- Available during the time of data collection.
- The participants who was willing to participate in the study.
- Able to understand English language.

Exclusion criteria

- Paramedical staff was excluded.

Ethical Consideration

An informed written consent form was taken by the subject before data collection. All the subjects were ensured that confidentiality and anonymity was maintained throughout the study.

Permission was obtained from Institutional Ethical Committee to carry out the study. Written permission was also obtained from Director of the respective hospitals before data collection.

Prior to administration to tools, subjects were given information verbally and in writing about the nature of the study and inform them about their right not to participate, to withdraw at any time without explanation.

Subjects were not any under any obligation to give consent for participating in this study. All the questions and queries were discussed and sort out before actual data collection.

Tools

Two tools were developed and utilized by the researcher for data collection, after reviewing the related literatures. There are 3 broad categories.

- Demographic information.
- Knowledge on disaster preparedness.
- Practices on disaster preparedness.

The demographical data include age, gender, clinical years of experience, marital status, qualification and department. And knowledge-based questionnaire includes 35 questions covered about the disaster management and preparedness. The practices questionnaire included the 25 questions about disasters drill done at hospital, what type of drill is done, ongoing training, how often, disasters plan update and how often developed.

The data was analyzed using SPSS. Descriptive statistics like frequency, percentage was used for describing demographic data as age in year, gender, clinical experience, marital status, qualification and department. Chi square test was used to determine the association between knowledge and expressed practices of staff nurses regarding disaster preparedness.

Pilot Study

The pilot study was conducted on 20 staff nurses of the Medeor hospital Imt Manesar, Gurugram, Haryana (122052) who were selected randomly from the same setting then excluded from the studying sample. The purposes of the pilot study were to ascertain the clarity and applicability of the tool to estimate the time needed to answer the questionnaire and to identify any possible obstacles that may hinder data collection.

In this research 100 questionnaire were delivered to the staff nurses. It includes the demographic data and knowledge and practices of the participant regarding the disaster preparedness. Data were collected and putted on.

RESULTS

SPSS version 21 for analysis. Applied descriptive statistics on different variable calculated and graphically portrayed in table and graphs.

Table-1: Demographic Information of the Participants Total Participants (N=100).

KNOWLEDGE SCORE					
Frequency Distribution		Mean%	Mean	SD	Percentage
Gender	Male	69.3%	24.26	6.71	43%
	Female	70.2%	24.58	5.60	57%
Age	20-40 Years	69.4%	24.30	6.08	97%
	41-60 Years	82.9%	29.00	4.00	3%
	Above 60 Years	0.0%			0%
Clinical Experience	<1	71.8%	25.12	5.49	59%
	1-5	65.6%	22.95	6.86	37%
	6-10	76.2%	26.67	2.08	3%
	>10	94.3%	33.00		1%
Qualification	Nursing diploma	70.6%	24.72	6.30	43%
	B.Sc. Nursing	67.9%	23.75	6.18	32%
	Post-graduation in Nursing	70.0%	24.50	5.52	24%
	PhD in Nursing	94.3%	33.00		1%
Department	Emergency	68.2%	23.86	6.03	36%
	General ward	71.9%	25.17	6.28	35%
	Triage	75.2%	26.33	3.72	15%
	Other	63.1%	22.07	7.21	14%

Table 3: The overall knowledge score of the study participants.

Category Score	Percentage	Frequency
ADEQUATE KNOWLEDGE (25-35)	56%	56
MODERATE KNOWLEDGE (13-24)	40%	40
INADEQUATE KNOWLEDGE (0-12)	4%	4

Maximum Score=35 Minimum Score=0

The overall knowledge of the study participants was adequate. Table#1 indicates that 56% (n=56) participants were respond positively regarding the knowledge questions, 40% (n=40) participants had moderate knowledge and 4% (n=4) were did not gave the correct answer about the knowledge questions.

The overall practice of the study participants was good. Table#2 indicates that 49% (n=49) participants were respond positively regarding the practice questions, 48% (n=48) participants showed average practice score knowledge and 3% (n=3) were the participants who responded poor.

Table-4: The overall practice score of the study participants.

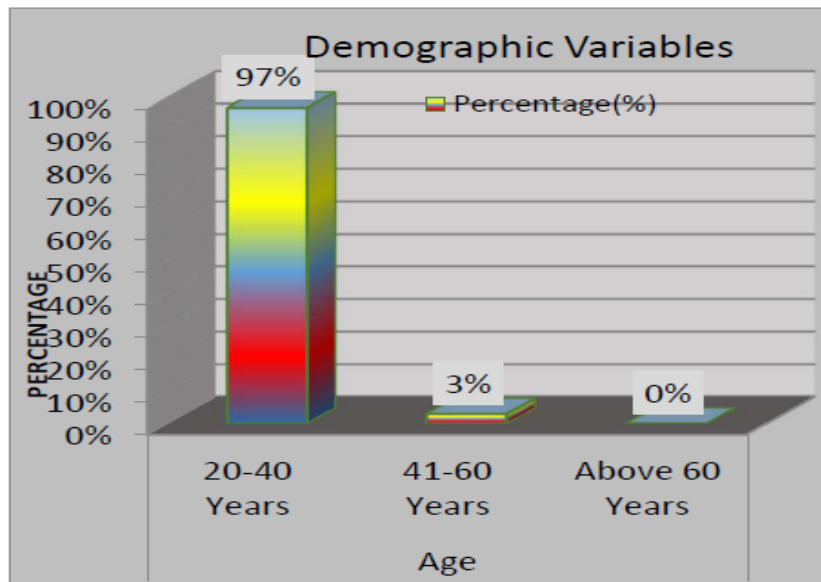
Category Score	Percentage	Frequency
GOOD (17-25)	49%	49
AVERAGE (9-16)	48%	48
POOR (0-8)	3%	3

Maximum Score=25 Minimum Score=0

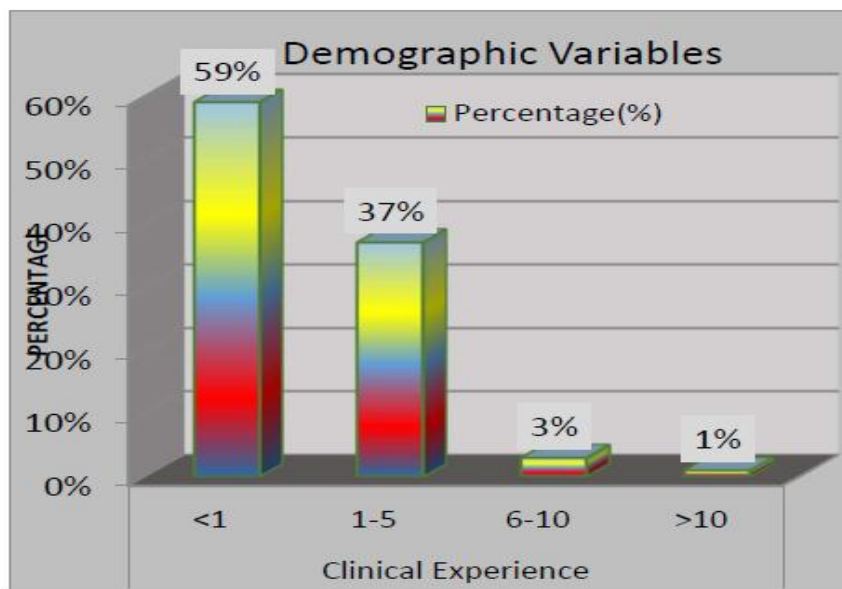
Table-5: Demographic Information of the Participants Total Participants (N=100).

PRACTICE SCORE					
Frequency Distribution		Mean %	Mean	SD	Percentage%
Gender	Male	67.3%	16.84	4.81	43%
	Female	65.8%	16.46	2.93	57%
Age	20-40 Years	65.9%	16.47	3.74	97%
	41-60 Years	85.3%	21.33	4.73	3%
	Above 60 Years	0.0%			0%
Clinical Experience	<1	66.0%	16.49	4.08	59%
	1-5	65.1%	16.27	3.03	37%
	6-10	82.7%	20.67	4.04	3%
	>10	100.0%	25.00		1%

Qualification	Nursing diploma	68.0%	17.00	2.50	43%
	B.Sc. Nursing	66.0%	16.50	3.96	32%
	Post-graduation inNursing	63.0%	15.75	5.16	24%
	PhD in Nursing	100.0%	25.00		1%
Department	Emergency	65.6%	16.39	4.11	36%
	General ward	68.8%	17.20	2.35	35%
	Triage	62.7%	15.67	3.44	15%
	Other	67.1%	16.79	6.10	14%



Graph-1: Age of the participants.



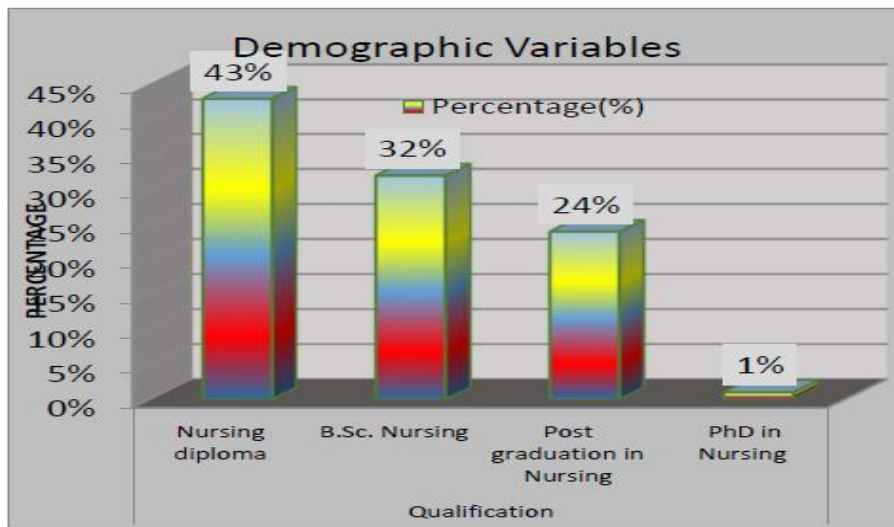
Graph-2: Age of the participants.

The overall demographic information of the participants as shown in the table#5. The results shows that the participants of this study were staff nurses in which majority were in the age group of 20-40years. The ages of the participants were ranges between (20- 40) 97%, (41-60) 3% and above 60 years was 0.0%. The clinical experience of the participants are matter a lot to handle

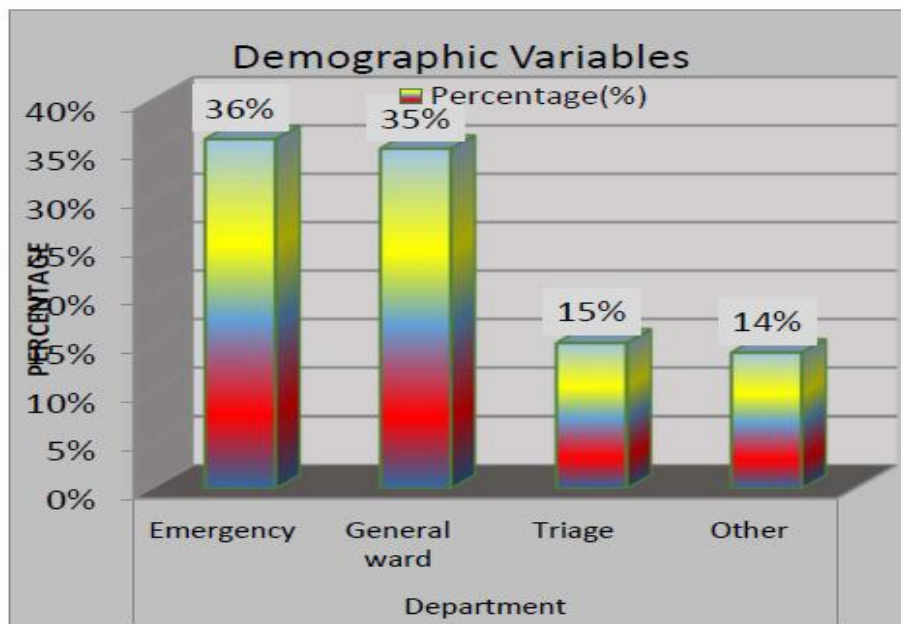
any kind of emergency in disaster. The clinical experience of most of the participants were 59 % who were working in the hospital for a period of (<1 years) followed by 37% who was working for the period of 1 to 5 years, then 3% who was working for aperiod of 6 to 10 year and 1% were working for the period of more than 10 years as shown in the table No.5. Most of the

participants who take part in this study were female 57% and 43% were male. The qualifications of the participants who had nursing diploma 43%, B.Sc. nursing participants were 32%, post-graduation were

24% and 1% PhD in nursing. The study was done from two private hospitals of Gurugram. The study participants were only staff nurse's total (100).



Graph-3: Qualification of the participants.



Graph-4: Department of the participants.

Table No 6: In the present research Chi square were applied to measure the significance or association.

Variables	P-Value	Results
Gender -Knowledge	0.891	Not signification (No association)
Gender -Practice	0.697	Not signification (No association)
Age -Knowledge	0.297	Not signification (No association)
Age -Practice	0.807	Not signification (No association)
Clinical Experience -Knowledge	0.099	Not signification (No association)
Clinical Experience -Practice	0.454	Not signification (No association)
Qualification -Knowledge	0.850	Not signification (No association)
Qualification -Practice	0.342	Not signification (No association)
Department -Knowledge	0.662	Not signification (No association)
Department -Practice	0.434	Not signification (No association)

By applying chi square among the demographical (gender, age, clinical experience, qualification and department) and questionnaire (knowledge and practice) variables to search association in between them. From the result of the chi square the clinical experience-knowledge p value 0.099, qualification- knowledge p value 0.850, clinical experience-practice p value 0.454, qualification-practice p value 0.342, department-knowledge p value 0.662 and department- practice p value 0.434, hence among all of them any association were not found.

DISCUSSION

Increasingly frequent global disasters are posing threats to human health and life as disasters cause mass causality incidences. The World Health Organization has called for countries to have detailed plans at all levels in order to be prepared for disasters that may arise. Nurses and midwives are frontline workers under stable conditions, but more so during situations of emergencies and crises, working both in pre-hospital as well as in hospital settings. In order to contribute to saving lives and promoting health under such difficult conditions, they need to have the right competencies.

The motive of the present study was to assess the nurse's knowledge and practices regarding disaster preparedness in the selected hospitals of the Gurugram, Haryana.

In overall view of the present study findings revealed the knowledge and practice score for male and female participants was 43% and 57% respectively. The results shows that the knowledge and practice of the male participants was average as compared to female participants that was good about the disaster preparedness. Conducted the pilot study on knowledge and practices on staff nurses regarding disaster preparedness there no significant association was found. Similarly in the present study results were obtained that the participants were having adequate 56% knowledge about disasters preparedness, what mock drills are and what their function is during the mock drills. The practices of the participants in the present study were good as compared to knowledge regarding the disaster preparedness. They participants did not know much enough about the mock drill's, there ongoing training; the disasters plan was periodically updated and the practices about disaster preparedness were insufficient. The results show that the overall good practices were 49%.

A comparative study of 4 years undergraduates nursing students was done to assess the educational needs concerning; disaster preparedness and response in Istanbul and Miyazaki. The study reported that most student nurses had no expectations on skills that could be gained from a disaster preparedness and response course/culture of disaster lecture. Nursing students in both cities seem more likely to participate in disaster preparedness and response courses/lectures. Researchers addressed the need to incorporate mass casualty care and disaster

management skills into undergraduate curricula. Core contents for nursing curricula in both cities need to be continued. Outcome competencies must be identified and validated through further research.

Another study conducted showed the results was found that shows the level of their practices were very negative regarding the disasters preparedness. In another study which is conducted on Nurses Knowledge, attitudes, practices and familiarity regarding disaster and emergency preparedness, the results of her study showed lack of knowledge level of the study participants and the study finding revealed that the practices of participants regarding disaster preparedness was below average level. A study conducted and according to the obtained results of this research, generally preparation against the any emergency and disasters in Tehran's hospital was found very weak. Its mean the practices were not good in selected hospital. Another study was conducted, the result of this study found that PHNs' (public health nurses) ability to practice regarding disaster management was at a moderate level. According to the study, A total of 877 nurses only 44 nurses answer the knowledge-based question and result showed that there was low level of knowledge regarding the emergency preparedness which is dissimilar to present study. This study results showed that nurses perceived that they are not fully prepared for disasters and were not aware of disaster management protocols in the workplace. Many KAP studies conducted of nurses' role in disaster and emergency preparedness. A study undertaken by nurses in Hong Kong the results concluded that nurses are not adequately prepared for disasters, but are aware of the need for such preparation. So that disaster management training should be included in the basic education of nurses.

CONCLUSION

The purpose of this study is assess the nurse's level of knowledge and practices regarding the disaster management and emergency preparedness. The study followed a quantitative approach and descriptive cross sectional study design to analyses and describes the identified variables. Based on the present study it can be concluded that the participants have a good knowledge on disaster, disaster drills, disaster plan, disaster preparedness. The overall knowledge of the participants in the present study was 43%. However, the practices were poor and there should be still need to do work on it in regard to ongoing training, plans should be periodically updated, and performance of drills should be done. The overall poor practices of the nurses were 57%. There is needed to work on the practice and knowledge as well in these two hospitals. The study revealed that hospitals currently have deficiencies in practices, management and performance management.

LIMITATIONS

The present study has some limitations as follows.

- Data has been collected from two hospital of the

Gurugram. Data collected was limited so its generalizability of the study is limited. It is recommended for future that all hospitals in a region should be included to take a broader review.

- Sample of the study was short to represent the large population. Therefore, large sample should be taken.
- Cross-sectional design of this study is yet another limitation.
- Convenient sampling is also limitation of the study whereas the probability sampling method can be enhancing the induction of different strata of the participants.
- The problem which faced most of the time during the completing the questionnaire was limitation of time. The study was conducted in a limited time period of 5 months.

RECOMMENDATIONS

- There should be adequate training of all nurses in both public and private health care setting in order to provide knowledge on how to prepare and handle any emergency situations.
- Disaster plan should be placed in every hospital where nurses and other staff should easily access them and Plan should be available when needed.
- The disaster management committee should make plan and make sure that all staff member should know where the plans are and meet all these plans.
- Every member of staff e.g., head nurses and staff nurses should know their roles, responsibilities and their function during a drill.
- Training program should be made regarding the emergency management and disaster preparedness by the management committee.
- Some educational program and training practice about the disaster and emergency preparedness should be placed in the nursing curriculum in order to their learning and training preferences.
- Nursing research in disaster is necessary in order to provide information to make evidenced-based decisions regarding practice and education.
- Disaster Management committee should make institution or training centre for the training of staff to handle any kind of emergency.
- All staff should inform about the regularity of the drill and ongoing training.
- The disaster management committee should be knowledge that all plan is regularly maintained and updated.
- Management committee should take responsibilities that all hospital is adequately prepared and plans are ready to use.
- Regular meeting should be continued to check the plan and proper implementation of the plans.
- Communication is very important for success of every plan. The telephone numbers and address of all staff members should be involved in the plan.
- Further researches should be made for maximizing the nursing education and quality of care in these

critical situations in the health care setting.

- The above duties should be checked by the disaster management committee and the administration of the hospital.

Strength of the study

The present study has a number of strengths which is as follows: This study conducted in the Gurugram, India context which assesses the knowledge and practice of staff nurses regarding the disasters preparedness. Moreover, this study has collected the large data on disaster, disaster preparedness process, knowledge and practice variable and as well as demographic variable of the study. In this study the self-administered questionnaire was used which was already been tested for validity and reliability. Data was collected after the signed of permission letter from the hospital authority and data was collected under supervision of nursing superintendent of the hospital. The rule of Ethical consideration was followed in this study. Anonymity and confidentiality were assured.

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