Nurses' Awareness and Perceptions towards Disaster Situations

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Abstract

Man-made or natural disasters are occurring more frequently in India and around the world. It is important that all nurses be prepared to care for people affected by disasters. An exploratory survey was conducted to assess the nurses' awareness regarding disaster nursing and their perceived abilities to react when disaster strikes. In this study, conducted in Aurangabad (MS), a total of 60 nurses of various cadres were selected by simple random sampling method. Semi-structured questionnaire was prepared with 15 questions to assess the awareness regarding disaster nursing and 15 questions related to perceived abilities of the nurses. Overall awareness level of Nurses was good, still majority of the nurses had gaps in the awareness. The overall ability of the all cadres of nurses was not satisfactory. Awareness about disaster nursing is independent of cadre of nurses. To test this we applied standard F test for collective comparison of means using ANOVA table. Since the computed F ratio was less than the table value the mean awareness of four cadres did not differ significantly accepting null hypothesis. Looking at the means for four cadres it was found that mean ability of teachers, staff nurses, III year students and IV year students did not differ significantly; however their ability score was substantially low as compared to the awareness score.

Recent cyclone in Orissa state (India) affected 13 million people; Government and many aid organisations could evacuate only one million people. According to study done specially on Indian conditions, the sea could rise by 15-38 cm by the year 2050. This, in turn, would mean a five-fold increase in the number of floods caused by storms. A study done by IIED, UK, shows that almost 75 percent of the people are vulnerable to catastrophes caused by environmental imbalance. Across the world or in our own backyard, disasters have devastating results due to inadequate preparation, the latest being the cyclone in northeast states. Since natural calamities tend to be unavoidable, efforts have to be made to withstand the aftermath of catastrophes. Recent floods in Mumbai and Tsunami on India's east coast have shown how unprepared we are to tackle extreme weather-related disasters.

The World Health Organisation defines a disaster as a "sudden ecological phenomena of sufficient magnitude to require external assistance." Disaster nursing is defined as the "the systematic and flexible utilisation of knowledge and skills specific to disaster-related nursing, and the promotion of a wide range of activities to minimise the health hazards and life threatening damage caused by disasters in collaboration with other specialised fields."

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The challenge in disaster planning is to find out a balance between risk and preparedness that realistically estimates the consequences of disasters. Planner should be aware of preparedness being made at state and local level and proceed logically. It should be noted that checking awareness and their perceived abilities to react when disaster strikes is an opportunity to stockpile human resources and plans to develop to deliver essential nursing services in the event of disasters.

Nursing students and trained nurses can play a significant role in caring for people affected by the disasters. Thus, disaster preparedness is key for nurses. It is essential that nurses learn the knowledge and skills needed to respond to disaster situations. Faculty from throughout the India needs to work together to provide all nurses with a common foundation for disaster nursing. Based on above facts, the investigator felt the need of assessing the awareness regarding disaster nursing and their abilities to react when disaster strikes.

Objectives

Two objectives of the study were (i) to assess the awareness of nurses regarding disaster nursing, and (ii) to explore the ability of nurses to react when disaster strikes.

Hypothesis

(Ho) Awareness about disaster nursing is independent of cadre of nurses.

Literature Review

Suserud (2010) investigated nursing students' knowledge about disaster. The results of the study illustrated that students did not lay importance to treatment of physical injuries, nor addressed the mental health needs of persons affected by disasters to the desired degree.

Andrea Sanders et al (2011) in a descriptive study sought to explore nursing students' perceptions about disaster nursing and use the findings to suggest recommendations for building the discipline of disaster nursing. Results of this study indicate that nursing students had the gaps of knowledge regarding disaster nursing; it suggested that all nurses could play a significant role in disaster situations.

Table 1: Distribution of Samples

Subjects	Male	Female	Total	%
Clinical Instructor	9	6	15	25
Staff Nurses	0	15	15	25
Third Year Student Nurses	6	9	15	25
Fourth Year Student Nurses	5	10	15	25
Total	20	40	60	100
Percentage	33.33	66.67	100	-

Methodology

Research approach adopted was exploratory survey method. Research hypothesis (Ho) is awareness about disaster nursing, independent of cadre of nurses. Simple Random Sampling method was used. The study was conducted during November 2013 in Aurangabad district (Maharashtra). A total of 60 nurses of various cadres were selected by simple random sampling method. Semi-structured questionnaire was prepared with 30 questions; 15 questions were from general awareness of disasters and disaster nursing whereas 15 questions were related to perceived abilities of the nurses.

A close-ended questionnaire was administered. Tool consists of three sections. Section I was the Demographic Profile. Section II consisted of Disaster Nursing awareness Questionnaire. Section III was a checklist of perceived abilities of nurses to react when disaster strikes. Each correct answer to the question was given one mark and incorrect answer was given zero mark. The level of awareness and ability was classified based on responses viz. Poor (0-5), Good (6-10), Excellent (11-15). Data were analysed by using standard statistical techniques of analysis.

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

Awareness level	Clinical Instructor	Staff Nurse	III Yr Students	IV Yr Students	Total	%
Poor (0-5)	2	3	3	3	11	18
Good (6-10)	2	4	4	2	12	20
Excellent (11-15)	11	8	8	10	37	62
	15	15	15	15	60	100

Table 3: Frequency distribution and percentage of samples according to level of ability

Perceived ability	Clinical Instructor	Staff Nurse	III Yr Students	IV Yr Students	Total	%
Poor (0-5)	6	4	9	4	23	38
Good (6-10)	5	5	1	6	17	28
Excellent (11-15	4	6	5	5	20	34
	15	15	15	15	60	100

Results

The majority of the respondents were female (40, 67%) as nursing profession consists of female majority population (Table 1). Mean age of student nurse was 21 years, and mean age of staff nurses were 28 years. The majority of the nursing students (67%) were working in a medical surgical setting after graduation. Staff nurses had passed general nursing and midwifery course and all (100%) respondents were working currently in clinical area.

Table 2 shows that overall awareness level of nurses is good but Clinical Instructors' and fourth-year nursing students' awareness is better than GNM staff nurses and third-year nursing students. Though overall awareness is good yet a majority of the nurses have gaps in the awareness.

The overall ability of the all cadres of nurses is not satisfactory because only 34 percent of nurses have excellent score, still 38 percent of nurses show poor ability to respond to the disasters (Table 3).

Mean awareness score of nurses is 10.58 (71%) and mean ability score is 7.82 (52%) which clearly indicates that nurses are well aware regarding disaster nursing but have poor ability to respond when disaster strikes.

Table 4 shows that general awareness level of nurses regarding disaster nursing is good (61%).

Major findings about awareness:

- 41 percent nurses identified the correct definition of disaster nursing.
- 41 percent nurses know correct colour code of the triage, 56 percent knew full form of CPR.
- 67 percent agreed that disaster nursing should be included in all the programmes.

Table 4: General awareness score of nurses regarding disaster nursing

Clinical Instructor	Staff nurse	STD III	STD IV	Total	%
15	15	14	15	59	98.33
12	9	5	14	40	66.67
11	14	8	14	47	78.33
9	6	7	1	23	38.33
15	15	15	15	60	100.00
62	59	49	59	229	61.07

Table 5 : Analysis of variance (ANOVA) table

Square of variance	df	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 percent level of significance = 2.76.

- 50 percent nurses responded that disaster nursing should be taught in first year syllabus.
- 20 percent nurses gave preference for second year, 15 percent nurses responded that it should be included in third and fourth year.
- 80 percent nurses think that disaster nursing should aim to prepare nurses for emergency situation.

The hypothesis (Ho) that awareness about disaster nursing is independent of cadre of nurses was tested. To test this, standard F test for collective comparison of means using ANOVA table was applied (Table 5).

Since the computed F ratio is less than the table value the mean awareness level of four cadres does not differ significantly accepting our hypothesis.

Looking at the means for four cadres we find that awareness levels of teachers, staff nurses, III year students and IV year students does not differ significantly (Table 6).

There were several major gaps in awareness that nursing students had about disaster nursing. When asked to define disaster nursing, the students listed several components of the definition. Very few students thought that knowing about community resources, having mock drills, and utilising disaster models was important to incorporate in disaster content.

Since the computed F ratio is less than the table value the mean ability of four cadres does not differ significantly accepting our hypothesis (Ho) (Table 7).

Looking at the means for four cadres we find that mean ability of teachers, staff nurses, III year students and IV year students does not differ significantly; however their ability score is substantially low as compared to the awareness score.

Table 6: Ability of nurses to react when disaster strikes

	Ability					
	Clinical Instructors	Staff nurse	III Yr student	IV Yr student	Total	%
Total Score	112	131	91	135	469	52.11
%	49.78	58.22	40.44	60.00	52.11	-
Mean	7.47	8.73	6.07	9.00		

Table 7: ANOVA table

Square of variance	df	Sum of square	Mean sum of square	F Ratio
Between the cadre	4-1=3	87	29	1.38
Error	59-3=56	1180	21	

Computed 'F' ratio = 29 / 21 = 1.38 table F value for 3 df and 56 df at 5 percent level of significance = 2.76.

Discussion

Disaster is a destructive event resulting in need for a wide range of emergency resources to assist and ensure the survival of the disaster striker. Investigator conducted study to assess the awareness and perceived abilities to respond when disaster strikes. Overall disaster nursing awareness level of nurses is good (71%); however, majority of the nurses have gaps in the awareness. The means for four cadres show that awareness level of teachers, staff nurses, III year students and IV year students do not differ significantly accepting our hypothesis (Ho). Results also revealed that IV year BSc nursing students' and Clinical Instructors' awareness was better than GNM staff nurses which implies that as course progresses awareness increases.

Investigators tried to find out perceived abilities of nurses when disaster strikes, which showed poor result (52%), proved statistically. Further 50 percent nurses responded that disaster nursing should be included in all type of programmes. We find that mean ability of teachers, staff nurses, III year students and IV year students does not differ significantly, however their ability score is substantially low (52%) as compared to the awareness score.

From above findings, it is understood that nursing students fail to conceptualise what really constitutes a disaster, mass casualty incident, and disaster nursing. Students in our study were clearly

asking for information about disasters, descriptions of nursing roles, and additional information about disaster plans and models. It clearly shows nurses to be lacking in training and education regarding disasters. It is also necessary to include practical sessions or mock drill session regarding mass casualty incidents in their curriculum. Investigator feels that though disaster nursing is included in the syllabus, correct methodology needs to be exercised to sensitise the student nurses regarding the issues.

Many studies have been conducted in New York following terrorist attacks. These studies investigated ability and willingness of health care workers to respond to work during disaster. Barriers to being able to work during the events included childcare, eldercare, personal and family health (Qureshi, 2012) and too little training and education.

It is difficult to compare our findings with those of similar studies because of the very small number of studies in the literature that have examined student perceptions about disaster nursing. However, students in our sample addressed the need for emotional support and counselling of disaster victims as frequently as they addressed the need for coordination of shelters or coordination of hospitals.

Recommendations

Many organisations and institutions concerned with disaster management should start working exhaustively to improve the abilities of nurses in disaster situation by developing excellent coursework of disaster nursing.

Nursing faculty must realise that disaster preparedness be made mandatory for all professional nurses. Thus, the content needs to be addressed in basic nursing curricula. This can be done by designing special course (Basic Disaster Life Support and Advanced Disaster Life Support) to provide all content or threading the content across several courses throughout the nursing curriculum.

Basic Disaster Life Support and Advanced Disaster Life Support should be designed with proper approval from American Heart Association (AHA) and Indian Nursing Council and included in the nursing programme.

Implications to Nursing

- Disaster nursing should be included in all types of nursing programmes.
- Components of Basic Life Support (BLS) and Advance Cardiac life Support (ACLS) may be included in each nursing programme.
- INC-recognised Disaster Nursing programme should be encouraged to be implemented in vulnerable regions like Gujarat, Maharashtra, NE states etc.
- To increase the ability of nurses for disaster situation nurses should be involved in planning cycle of the city disaster management.
- Mock disaster drill should be organised involving nursing services to increase their ability.
- Even in the present curricula triage, tagging and CPR may be included in procedure demonstration.

Limitations

A greater sample size of students at all levels in the nursing programme would have provided a broader understanding of how nursing students perceive disaster nursing. Incorporation of pre-test and post-test measures would have gauged how much of an understanding students had after being exposed to disaster-related content or mass casualty competencies. Nonetheless, the data from this study provides a starting point for discussion on curricula addressing the issue.

Conclusion

Nursing students and nurses are a valuable resource in communities. It is essential that nursing faculty educate nursing students about disaster nursing so that they are prepared to care for the people affected by disasters. The recommendations in this study serve as a guide to nursing faculty and nurse clinicians to enhance the speciality of disaster nursing.

References

1. Basavanthapa BT. Community Health Nursing. Jaypee Brothers, New Delhi -2010, pp 953-60
2. Coping with Major Emergencies - Who Strategy and Approaches to Humanitarian Action. Geneva: World Health Organization, 2010
3. Park K. Preventive and Social Medicine, 21st edn, 2012 Banarsidas Banot-Jabalpur
4. Marcia Stanhope, Jeanette Lancaster. Disaster nursing, 6th edn, CV Mosby Company, pp 285-314, 2011
5. Qureshi K, et al. Health care workers' ability and willingness during disasters. *Journal of Urban Health: Bulletin of the New York Academy of Medicine* 2005; 82(3): 378-88
6. Dave PK, et al. Emergency Medical Services and Disaster Management. Jaypee Brothers, Medical Publishers (P) Ltd, New Delhi, 2011, pp 252-339
7. Tracey L, O'Sullivan. Prehospital and Disaster medicine, May-June 2008, Disaster and Emergency Management, http://pdm.medicine.wisc.edu accessed 3.10.2013
8. http://www.fema.gov.library/dizol.htm
9. http://www.redcross.org/services/disaster/
10. http://www.who.int/topics/en/

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