ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 6 | June - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

KNOWLEDGE AND ATTITUDE REGARDING DISASTER MANAGEMENT AND EMERGENCY PREPAREDNESS AMONG NURSING STUDENTS OF DELHI, NCR

Nursing

Ms. Karuna	MPH Student, Laboratory of Disease Dynamics & Molecular Epidemiology, Amity Institute of Public Health, Amity University Uttar Pradesh, Noida, India
Ms. Ruchi Thakur	MPH Student, Laboratory of Disease Dynamics & Molecular Epidemiology, Amity Institute of Public Health, Amity University Uttar Pradesh, Noida, India
Ms. Kalsang Choedon	MPH Student, Laboratory of Disease Dynamics & Molecular Epidemiology, Amity Institute of Public Health, Amity University Uttar Pradesh, Noida, India
Dr. Aanchal Anant Awasthi*	Assistant Professor, Health Data Analytics & Visualization Environment Laboratory, Amity Institute of Public Health, Amity University Uttar Pradesh, Noida, India *Corresponding Author
Dr. Neha Taneja	Assistant Professor, Laboratory of Disease Dynamics & Molecular Epidemiology, Amity Institute of Public Health, Amity University Uttar Pradesh, Noida, India
Dr. Ansh Pal Singh	Medical Intern, North Delhi Municipal Corporation Medical College & Hindu Rao Hospital, Delhi, India
Dr. Rajiv Janardhanan	Director & Head, 1Laboratory of Disease Dynamics & Molecular Epidemiology, Amity Institute of Public Health, Amity University Uttar Pradesh, Noida, India; 2Health Data Analytics & Visualization Environment Laboratory, Amity Institute of Public Health, Amity University Uttar Pradesh, Noida, India

ABSTRACT

INTRODUCTION: Nurses serve a critical role in emergency preparedness at the local, state and national levels through planning, community and consumer education and direct care provided during disasters. The aim of current study is to assess the knowledge and attitude of nursing students regarding disaster management and emergency preparedness.

METHODOLOGY: A cross-sectional study was conducted on 130 nursing students. Data was collected using a structured questionnaire. Descriptive statistics was used to explore data. Chi-square test was used to study the association between categorical variables.

RESULTS: The median age of 130 students were 22 (18-31) years. Out of total, 96.9% of the students were females. Only 58(44.6%) students had undergone mock-drill. Almost half of the students have never experienced disaster 72(43.84%). Majority nursing student exhibits average knowledge 79(60.8%), There was a significant association of knowledge level of students with their age ($p=0.004$) and educational status ($p<0.001$).

CONCLUSION: Based on limited sample size of our study, we concluded that the knowledge and attitude regarding disaster management and emergency preparedness among nursing students were sub-optimal. There is a continuous need for training workshops to be organized among nursing students to provide the current knowledge in the area.

KEYWORDS

Knowledge, Attitude, Disaster Management, Emergency Preparedness, Nursing Students

INTRODUCTION

Disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the power of the affectedcommunityorsocietytocopeusingitsown resources(1).Natural disasters include flood, cyclone, drought, earth quake, cold wave, thunderstorms,heat waves,mud slides, volcanoes,Tsunamisandstorm. Man-made disaster includes epidemic, deforestation, chemical pollution,wars, road /train accidents, riots, food poisoning, industrial disaster (2).

Asia accounted in 2015 for 62.7% of worldwide reported disaster victims (against 80.6% for the 2005-2014 decade's average), India has a highly diversified range of natural features. Its unique geo-climatic conditions make the country among the foremost susceptible to natural disasters within the world. 28 percent of the country's total cultivable area is drought prone. 60 percent land mass is earthquake prone and 76 lakh hectares of land is flooded every year (3).

Natural disasters generally affect the communities, people, and healthcare systems. Therefore, nurses and other healthcare professionals play an imperative role in the healthcare system, and ought to be prepared for the suitable response in the case of disaster (4).Emergencypreparednessisthe intended responseto an unexpected, serious and dangerous incident. It includes the preventive actions, preparation to satisfy adverse situations, mitigation and certain measures to possess positive controls during that situation to save lots of lives and reduce property damage. Emergency planning is carried out by governments, organizations, families and individuals and is best conducted before emergency situations occur.

Disaster preparedness refers to measures taken to organize for and reduce the consequences of disasters. Disaster preparedness activities embedded with risk decline measures can prevent disaster situations and also end in saving maximum lives and livelihoods during any disaster situation, enabling the affected population to get back to normalcy within a short time period(5).Disaster management includes certain administrative decisions and operational activities that involve Prevention, Mitigation, Preparedness, Response, Recovery, and Rehabilitation(6).

Nurses are the key person working within the hospital emergencies and any disasters and ready an idea to stop the hazards. During the disaster the first respondent are the nurses, who have enough knowledge and skill related to the disasters and disasters management (7,8). Understanding the importance of disaster, nursing enables nurses to take part in all stages of a disaster, and to actively and effectively participate in disaster management. In doing so nurses' knowledge and attitude regarding emergency preparedness & disaster management could play vital role. The main goal of nursing in crisis is to achieve best possible level of health for the individuals and communities affected by crisis. Thus, this research work was aimed to study the knowledge and attitude of nursing students regarding disaster management and emergency preparedness.

METHODOLOGY

A cross-sectional study was conducted among nursing students of Delhi NCR region nursing colleges. This study was conducted during August to September 2019.Structured questionnaire was used to obtain information on demographic profile, knowledge level and attitude of the nursing students about disaster management and emergency preparedness. Knowledge section of the questionnaire consisted of 23 self-constructedquestions. A score of 1 was assigned to correct answers and 0 to wrong answer. This pattern of scoring results in total knowledge scores range from 0 to 23. Quartile based categories was used to differentiate nursing students having poor, average and good knowledge. Attitude section of the questionnaire was consisted of 11 questions, similar to the previously published study (10). Frequency & percentage were reported for categorical data. Mean or median along with standard deviation or range were reported for continuous data. Normality of continuous data was used using Shapiro-Wilk test. Correlation coefficient was computed using Spearman's correlation coefficient. Chi-square test was used to test the association between categorical variables. A p-value of less than 0.05 was considered as statistically significant. Data was analyzed using IBM SPSS statistics for window, version 23.0.

RESULT

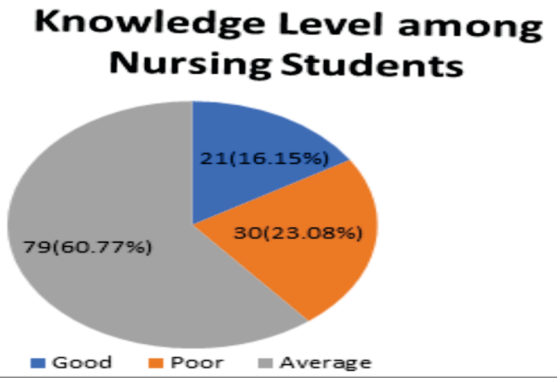
This study comprised 130 nursing students. Median age of study participants was 22(18-31) years. Majority of the students (96.9%) were females. Out of total, 62(47.69%) were GNMs, followed by B.SC Nursing 52(40.0%), Post B.SC Nursing 10(7.69%) and M.SC Nursing 6(4.61%). Only 58(44.6%) students underwent for mock drill regarding disaster management. A very few 18 (13.8%) students experienced disaster earlier. Almost one forth, of students ever attended workshop on disaster management. Out of total, 21(16.2%) nurses handled disaster victim patient. **(Table 01)**

Table 01: Characteristics Of Nursing Students Included In The Study (n=130)

Characteristics	Number	Percentage
Sex		
Male	4	3.1
Female	126	96.9
Age		
18-22	82	63.07
23-27	47	36.15
27-31	1	0.769
Qualification		
GNM	62	47.69
B.SC	52	40.0
PostB.sc	10	7.69
M.sc	6	4.61
Mock Drillregarding Disaster Management		
Yes	58	44.6
No	72	55.4
Experience Disaster Before		
Yes	18	13.8
No	112	86.2
Workshop Attended On Disaster Management		
Yes	33	25.4
No	97	74.6
Received Disaster Victim Patient		
Yes	21	16.2
No	109	83.8

Median of total knowledge score was 9 ranging from 3 to 18. First and third quartiles of knowledge scores were 8 & 13 respectively. Hence students were categorized as poor, average and good knowledge based on these quartiles. A total score of less than equal to 7 was considered as poor knowledge, score of 8-13, as average knowledge and more than 13 as good knowledge. In our study, 30(23.8%) nursing students were having poor knowledge. Only a small percentage of students (16.15%) have good knowledge about Disaster management &preparedness. **(Figure 01)**

Figure 01. Knowledge Level Category Regarding Disaster Among Study Participants (n=130)



Responses received from nursing students regarding disaster preparedness attitude were summarized in **Table 02**. This table portrays that almost (80%) students agreed to management should be adequately prepared should a disaster occur. Only (20.8%) students said no need to know about disaster plans, (23.8%) believed that disaster planning is for few people on the hospital. However, majority (68.5%) agreed that potential hazards likely to cause disaster should be identified & dealt with and (87.7%) agreed that training is necessary for all health management. Out of total 100 (76.9%) agreed that disaster plan is necessary & (80.8%) agreed that it needs to be regularly updated. Only (30%) students said disaster are unlikely to happen in their hospital. Only (22.3%) students were agreed upon, disaster management is for nurses & doctors only. (73.8%) students were agreed that disaster simulation should occur frequently in the hospital. They believed that disaster management is for the entire management. Those who said that drills should be conducted in the hospital were (82.3%)

Table 02.Attitude Regarding Disaster Preparedness Among The Study Participants.

	AGREE	DISAGREE	UNSURE
	Number (%)	Number(%)	Number (%)
Ido not need to know about disaster plans.	27(20.8)	98(75.4)	5(3.9)
Management should beadequate lyprepared should adisaster occur.	104(80)	23(17.7)	3(2.3)
Disaster planning is for a few people in the hospital.	31(23.8)	94(72.3)	5(3.8)
Potential hazards likely to cause disaster should be identified and dealt with.	89(68.5)	14(10.8)	27(20.8)
Training is necessary for all health management.	114(87.7)	12(9.2)	4(3.1)
Do you think it is to have a disaster plan?	100(76.9)	22(16.9)	8(6.2)
Disaster plans need to regularly updated.	105(80.8)	16(12.3)	9(6.9)
Disaster sare unlikely to happen in our hospital.	39(30)	65(50)	26(20)
Management is for nurses and doctors only.	29(22.3)	90(69.2)	11(8.5)
Disasters imulation should occur frequently in the hospital.	96(73.8)	13(10)	21(16.2)
Drills should be conducted in the hospital.	107(82.3)	13(10)	10(7.7)

Table 03 portrays the association between knowledge regarding emergency preparedness and disaster management and sociodemographic characteristics of nursing students. Association between educational status was found to be significant ($p<0.001$). GNM students having good knowledge as compare to B.sc /Post B. sc/M.sc nursing students. Association between knowledge level &past experience of mock drill ($p< 0.001$) was also found

significant. Association between knowledge level & workshop attended was also found to be significant (p<0.001).

Table 03. knowledge Level Of Nursing Students With Socio demographic Profile

Characteristics	Number (%)	Knowledgelevel			
		Poor n(%)	Average n(%)	Good n(%)	Significance
Mockdrill					
Yes	58(44.6)	13(22.4)	27(46.6)	18(31.0)	<0.001*
No	72(55.4)	17(23.6)	52(72.2)	03(4.2)	
Workshop					
Yes(33)	33(25.4)	06(18.2)	14(42.4)	13(39.4)	<0.001*
No (97)	97(74.6)	24(24.8)	65(67.0)	08(8.2)	
Education					
GNM	62(47.7)	4(6.5)	40(64.5)	18(29.0)	<0.001*
B.sc/Post B.sc/M.sc	68(52.3)	26(38.2)	39(57.4)	3(4.4)	
*Significantat 5% level of significance.					

DISCUSSION

The present study was aimed to assess the nursing students 'knowledge and attitude' regarding disaster and emergency preparedness among nursing students of Delhi, NCR. The overall, student nurses revealed a satisfactory level of knowledge in disaster management and emergency preparedness 79(60.8%). Furthermore, our study revealed the percentage of good & poor knowledge were 21(16.15%) and 30(23.07%) respectively. In another study result shows adequate knowledge level (24.5%), moderate adequate (51.1%), Inadequate (24.5%) (9). In western countries, few studies were done on similar contents. In comparison, A KAP study was conducted by the Rosemary Maud Moabi on the knowledge, attitudes and practices of hospital management at the Johannesburg Hospital regarding disaster preparedness in Johannesburg,2008. The study was conducted utilizing a self- administered questionnaire with structured and open- ended questions. The participants know what is disaster preparedness(62.5%) which slightly lower than our study (70.8%)(10).A cross sectional study was conducted on Nurses Knowledge and Practices regarding Disasters Management and emergency Preparedness by Rehana Shabbir, Lahore, Pakistan among 156 staff nurses were know (60.9%) know what is disaster preparedness& our findings are (70.8%)(7).In comparison, a knowledge, attitude and practice study was conducted regarding disaster preparedness at a tertiary-care hospital of Udaipur, Rajasthan among 87 medical internship students (11). In their study 76 (87.36%) knew about disaster preparedness. In contrast**,** our study represents only 92(70.8%) knew about disaster preparedness. The likely reason for observed difference between two studies may be due to greater exposure to internship students in Yogesh S et al. (2016) as compare to nursing students recruited in our study. Another study on knowledge of disaster preparedness among nurses at two tertiary care hospitals in Lahore concluded inadequate knowledge(48%) regarding disaster preparedness.(12) Another cross sectional study was conducted in the emergency nurses knowledge & practice regarding preparedness of disaster management at a university hospital Egypt reported (63.6%) know about disaster preparedness(13). In contrast, our research findings shown satisfactory (60.8%) level of knowledge. An explorative study on emergency nurses' readiness for disaster response conducted by Mohammed Ali,(2019)(14)have shown most of the emergency nurses had moderate knowledge (55%)which is almost similar to our findings of (60.8%).A prospective KAP study on disaster management of healthcare staff conducted by Nidhi Yadav, K. Preetham, P. Anchalia has reported that nurses were having (67.78%) knowledge regarding disaster management and our findings stated (73.8%), (44.5%) have agreed to know about the disaster plan whereas our findings shown (75.4%). (15) There is another cross-sectional study on the knowledge and attitude of Yemeni health professionals regarding emergency and disaster management training which has shown that (53.5%) fair knowledge and our findings shown (73.8%). (16) This difference in finding could be due to different study cohort of studies.

In comparison, across-sectional study was conducted by Abdullah Nofalet al.(2018)including the practice aspect among 189 emergency department staffs, Kingdom of Saudi Arabia reported that disaster are unlikely to happen in our hospital (34.9%), our participants also reported the same percentage (30%). Furthermore, (11%) participants agreed that disaster management & planning is for few people in the hospital as compare to23.8% reported in our findings(17).A study on role of health care workers during emergency preparedness in selected hospitals of Navi Mumbai reported positive attitude towards disaster planning process and (88%) indicated that they were aware of the disaster happenings. Similarly, our finding stated positive attitude towards disaster planning but only (50%) were aware of disaster likely to happen in their respective hospital(18).A cross-sectional study on knowledge attitude & practice of the department of emergency medicine of employees regarding disaster planning & preparedness at UP Philippine General Hospital reported positive attitude towards disaster simulations should occur frequently in the hospital(74%)(19) and another cross sectional study on knowledge, attitude, practice & familiarity regarding disaster & emergency preparedness in Saudi Arabia also reported (73.4%)(20) &our finding are similar to this (73.8%).

In this study, we found association of knowledge with education, Mock drill and previous workshop experience (p<0.001) (Table 03). GNM students attended more mock drill (64.5%) as compare to another educational group (26.5%) (p<0.001). Although not significant, higher percentage of GNM attended workshop (29.0%) as compare to another group (22.1%) (p=0.362).

In the light of information portrayed in this study, we suggest that the disaster committee should have to work to build up knowledge and positive attitude of the nursing students so that their hospital will be ready to handle any disaster. Conduct of a drill in the emergency department will increase the knowledge and continually improve its practice in disaster preparedness.

In India, there are dearth of studies published on knowledge & attitude regarding disaster management & emergency preparedness, especially in Delhi NCR region. One of the strengths of our study is that we made & attempt to estimate knowledge & attitude regarding disaster management & emergency preparedness in Delhi NCR region. However, this study have several limitations as well. Due to lack of time and resources, this study was conducted on small sample size; also, only limited number of nursing colleges were considered in this study. Hence, in spite of comparable similar results with published studies, we could not generalize results of this study to a general population.

CONCLUSION

Based on limited sample size of our study, we concluded that the knowledge and attitude regarding disaster management and emergency preparedness among nursing students were sub-optimal.There is a continuous need for training workshops to be organized among nursing students to provide the current knowledge in the area with a behavioral change in the attitude leading to better management in case of emergency.

REFERENCES

(1) UNISDR. 2009 UNISDR Terminology on Disaster Risk Reduction [Internet]. Geneva: United Nations International Strategy for Disaster Reduction; 2009 [Accessed 2020 April].Available from: https://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf

(2) Saundra K. Schneider. Dealing with Disaster: Public Management in Crisis Situations. M.E. Sharpe Publishers. 2011: 253-286s

(3) Ezhilarasi,M.N.,&Jothy,K.(2018).KnowledgeofDisasterPreparednessandManagement among Nurses in the Disaster Prone Areas of Kerala. Int J Innov Stud Sociol Humanities, 3(11),61-70.

(4) Shammah, A. A. (2018). Preparedness Assessment for Disaster Management Among Dhahran Al Janoub General Hospital Staff During Hazm Storm Support 1436/2015. International Journal of Community & Family Medicine, 2018. DOI: 10.15344/2456-3498/2018/138

(5) Coppola,D.P.(2006).Introductiontointernationaldisastermanagement.Elsevier.

(6) Module 4 - Capacity Building in Asia using Information Technology Applications (CASITA) - Asian Disaster Preparedness Center (ADPC),Bangkok.Available from: http://www.adpc.net/casita/course-materials/Mod-4-Disaster-Mgmt.pdf

(7) Shabbir,R.,Afzal,M.,Sarwer,H.,Gilani,S.A.,&Waqas,A.(2017).NursesKnowledgeand Practices Regarding Disasters Management and Emergency Preparedness.DOI: 10.21276/sjmps

(8) Satoh, M., Iwamitsu, H., Yamada, E., Kuribayashi, Y., Yamagami-Matsuyama, T., & Yamada, Y. (2018). Disaster Nursing Knowledge and Competencies Among Nursing University Students Participated in Relief Activities Following the 2016 Kumamoto Earthquakes. SAGE Open Nursing, 4, 2377960818804918. https://doi.org/10.1177/2377960818804918

(9). Gladston, S., & Nayak, R. (2017). Disaster preparedness among nurses working in a paediatricacutecaresettingofatertiaryhospital,southIndia.IOSRJNursHealthSci,18,25-35.DOI:10.9790/1959-0602015559

(10). Moabi, R. M. (2008). Knowledge, attitudes and practices of health care workers regarding disasterpreparednessatJohannesburghospitalinGautengProvince,SouthAfrica(Doctoral dissertation, University of the Wit watersr and). Availablefrom: http://citeseerx. ist.psu.

edu/viewdoc/download?doi=10.1.1.472.937&rep=rep1&type=pdf
(11). Singhal, Y. K., Bhatnagar, R., Lal, B., & Paliwal, B. (2016). Knowledge, attitudes, and practices of medical internship students regarding disaster preparedness at a tertiary-care hospital of Udaipur, Rajasthan, India. International Journal of Medical Science and Public Health,5(8),1613-1617.DOI: HYPERLINK"https://www.researchgate.net/deref/http%3A%2F%2Fdx.doi.org%2F10.5455%2Fijmsph.2016.25112015263"10.5455/ijmsph.2016.25112015263
(12). Khan, S., Kausar, S., & Ghani, M. (2017). KNOWLEDGE OF DISASTER PREPAREDNESS AMONG NURSES AT TWO TERTIARY CARE HOSPITALS IN LAHORE. Biomedica, 33(1).Available from: http://www. the bio medica pk. com/articles/526.pdf
(13). KhalilNS,AhmedAtiaSM,MoustafaMFandHafezSolimanTT.(2019)Emergencynurses' Knowledge and Practice Regarding Preparedness of Disaster Management at a University Hospital.Egypt.NursHealthCareIntJ,3(3):000192.DOI:10.23880/nhij-16000192
(14). Mohammed S, Mary P, Hamad G. Emergency nurses readiness for disaster response-an explorative study.ARJ,2019;04(01);10. Available from: https:// www. arjonline. org/papers/arjn/v4-i1/1.pdf
(15). Yadav, N., Preetham, K., & Anchalia, P.(2016) A PROSPECTIVE KAP STUDY ON DISASTER MANAGEMENT OF HEALTHCARE STAFF. International Journal of Therapeutic Applications, Volume 33 :129-134. Available from: http://dx.doi.org/10.20530/IJTA_33_129-134ISSN2320-138X©2016
(16). Naser, W. N., & Saleem, H. B. (2018). Emergency and disaster management training; knowledge and attitude of Yemeni health professionals-a cross-sectional study. BMC emergencymedicine,18(1),23.doi.org/10.1186/s12873-018-0174-5
(17) Nofal, A., Alfayyad, I., Khan, A., Al Aseri, Z., & Abu-Shaheen, A. (2018). Knowledge, attitudes, and practices of emergency department staff towards disaster and emergency preparedness at tertiary health care hospital in central Saudi Arabia. Saudi medical journal, 39(11), 1123. DOI: HYPERLINK "https:// doi. org/ 10. 15537/ smj.2018. 11.23026"10.15537/smj.2018.11.23026
(18). Desai,S.C.,Doke,P.,&Mohanty,N.C.(2017).Roleofhealthcareworkersduringemergencypreparedness in selected hospitals of navi mumbai. INTERNATIONAL JOURNAL OF SCIENTIFICSTUDY,5(3),77-80.
(19). Gundran,C.P.(2015).Knowledge,AttitudesandPracticesoftheDepartmentofEmergency Medicine Employees Regarding Disaster Planning and Preparedness at UP-Philippine General Hospital. Available from :https:// www. researchgate. net/publication/260312271_Knowledge_Attitudes_and_Practices_of_the_Department_of_Emer genc y_Medicine_Employees_Regarding_Disaster_Planning_and_Preparedness_at_UP-Philippine_General_Hospital
(20). Ibrahim, F. A. A. (2014). Nurses knowledge, attitudes, practices and familiarity regarding disasterandemergencypreparedness–SaudiArabia.AmericanJournalofNursingScience, 3(2),18-25.doi:10.11648/j.ajns.20140302.12