

Demographics and Disaster Risk Reduction and Management of Government Hospital Nurses in Zambales, Philippines

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Abstract

During times of disaster, hospitals play an integral role within the healthcare system by providing essential medical care to their communities. Any incident that causes loss of infrastructure or patient surge, such as a natural disaster, terrorist act, or chemical, biological, radiological, nuclear, or explosive hazard, often requires a competent response and recovery effort of nurses. This descriptive study aimed to assess the disaster risk reduction and management of government hospital nurses on the components of disaster prevention and mitigation, disaster preparedness, disaster response, and disaster rehabilitation and recovery. The one hundred respondents were randomly selected from the five government hospitals in the province of Zambales, Philippines. The researchers employed various data gathering procedures such as interview and the use of questionnaire. Data were statistically treated using frequency, weighted mean, percentage and ANOVA. The researchers found out that the disaster risk reduction and management by government hospital nurses was frequently practiced. Moreover, it revealed that disaster risk reduction and management has a significant difference on the respondent's education, training and work experiences. Healthcare systems need to ensure that all healthcare staff including nurses are ready for disaster occurrences. Regardless of the variation of demographic profiles, nurses should know the scope of their responsibility and role in responding to, managing and recovering from disasters impacts.

Keywords: Disaster, nurse, prevention, descriptive, Philippines

Introduction

Disasters occur throughout the world nowadays, causing severe public health threats and resulting in remarkable impact regarding deaths, injuries, and damage facilities and devastation, distress, and loss of livelihoods. Developing nations and fewer resourced countries and communities are mostly susceptible to the impact of disasters on health systems and health care and in the whole social and economic performance (International Council of Nurses and the World Health Organization, 2012).

According to World Health Organization (2016), due to the recent global increase in disasters, it is recommended that all countries, no matter how frequently they experience disasters, consider training their healthcare professionals to respond to disasters as a national and local priority. As nurses make up the majority of healthcare providers, they represent an indispensable workforce during disasters. The fundamental attributes of the nursing practice are to provide care to the injured or ill, assist individuals and families to deal with physical and emotional issues and work to improve health and well-being within the community. These attributes require competent nurses who are ready to respond to all situations, including in the event of a disaster. They must be able to adapt their skills from focusing on individuals to large numbers of patients, both in their delivery of lifesaving and emergency care and in the maintenance of public health. Disaster training for nurses is vital. Nurses must be involved in all phases of disaster planning in order to increase understanding of their role and expected contributions in response to a disaster.

According to United Nations Office for Reduction Risk (2015), disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyze and reduce the causal factors of disasters. Reducing exposure to hazards, lessening the vulnerability of people and property, wise management of land and the environment, and improving preparedness and early warning for adverse events are all examples of disaster risk reduction.

The International Council of Nurses (2011), stressed that skills of nurses like critical judgment and problem-solving, joined with their flexibility and malleability, help deliver the methods for overseeing the difficulties that take place during disasters. Additionally, the aforesaid body states that though no two disasters are precisely the same, and nurses often must be able to manage and adapt their care practices, they must be informed of their potential role to effectively distribute care in a disaster. This preparation comes through education in related disaster issues, skills acquired through applied practices communication with preparedness procedures, and a definite understanding of local and regional capabilities and resources.

Health institutions such as hospitals should be a source of strength during emergencies and disasters. Disasters occurrence is present throughout the world causing great impact on people's livelihood, health and even lives. In that regards, natural disasters that either human or technology cannot predict the accurate time of an incident. An assessment of the disaster risk reduction and management is essential to determine the readiness of the registered nurses in the government hospitals to respond before, during and after the occurrence of disaster situations. As a member of healthcare team, nurses must establish and enhance their knowledge and skills in rendering quality patient care in all phases of disaster risk reduction and management to the completeness of their capabilities. Government hospitals experiencing an excessive demand for health services due to a critical event are strongly encouraged to be prepared to implement each action effectively and as soon as it is required. Hospital emergency management is a continuous process requiring the seamless integration of planning and response efforts with local and national programs.

Methodology

Research Design

The research study used the descriptive method of research to make careful assessment in measuring the relationship between profile of the respondents and their perceptions on disaster risk reduction and management.

This type of research methodology focuses in the present situation. The purpose is to find new truth and to provide facts on scientific judgment. It also provides basic knowledge on the nature of objects and individuals also known as statistical research, describes data and characteristics about the population or phenomenon being studied. Descriptive research answers the questions who, what, where, when, why and how. Although the data description is factual, accurate and systematic, the research cannot describe what caused a situation. Thus, descriptive research cannot be used to create a causal relationship, where one variable affects another. In other words, descriptive research can be said to have a low requirement for internal validity.

Population and Sample of the Study

A total of one hundred respondents, which is above eighty percent of the total tenured positions, was purposively selected from five government hospitals in the province of Zambales Philippines. The distribution of respondents was as follows: twelve from Ospital ng Sta Cruz, twenty from Candelaria District Hospital, forty-five from President Ramon Magsaysay Memorial Hospital, eight from Kainomayan Primary Hospital, and fifteen from San Marcelino District Hospital.

Research Instrument

The items of this tool were generated from the theoretical perspective based on literature analysis as means of collecting data that focus at assessing the disaster risk reduction and management by government hospital nurses.

Researchers used a survey-questionnaire as their research instrument for this study. The first part of the survey-questionnaire was concerned about the profile of the respondents which includes the age, sex, civil status, highest educational attainment and years of working experience in the nursing profession. The second part aimed to assess the perception of the respondents on disaster risk reduction and management which was described according to disaster prevention and mitigation, disaster preparedness, disaster response and disaster rehabilitation and recovery.

Furthermore, the following Likert-type scale was used to describe the respondents' perceptions.

- 7 - Every Time
- 6 - Usually (In about 90% of the chance I could have done)
- 5 - Frequently (in about 70% of the chance I could have done)
- 4 - Sometimes (in about 50% of the chance I could have done)
- 3 - Occasionally (in about 30% of the chance I could have done)
- 2 - Rarely (in less than 10% of the chance I could have done)
- 1 - Never

Content Validity Index

The content validity index of this survey-questionnaire revealed .99, indicated as acceptable (Davis, 1992; Polit & Beck, 2006). All six experts rated 38 out of the 40 items as relevant. However, the item judged not relevant differed for the six experts. Following the definition requiring universally congruent ratings by the experts, the S –CVI/UA in this example would be .95, 38 out of the 40 items received relevance rating of 3 or 4 by all the six experts.

Data Gathering Procedure

Having found the questionnaire valid and reliable, an ethical clearance was secured from the institutional review board to ensure that this study did not involve any form of invasion of the respondent's integrity. Prior to the distribution of the survey-questionnaires, the respondents received written information about informed consent, purpose of the study, including its voluntary nature, study procedures, benefits of the participation, voluntary participation, including the right to withdraw anytime, and a guarantee of the maintenance of anonymity, and confidentiality of the data.

Data collected for the study focused on quantitative information acquired through primary data (questionnaires) and secondary data (review of

relevant research literature and documents). All the findings were collected, transcribed and analyzed.

Statistical Treatment of Data

The data were tabulated and analyzed using the Statistical Package for Social Science (SPSS). Specifically; the statistical tools were as follows:

The descriptive statistics such as the frequency counts and percentage were employed to determine the profile variables. Means and standard deviation were utilized to identify the disaster risk reduction and management as perceived by government hospital nurses.

An analysis of variance (ANOVA) was used to test the significant difference of disaster risk reduction and management when grouped according to their profile variables of age, sex, civil status, highest educational attainment and of years of experience in the nursing profession.

The following served as reference in interpreting the mean scores or category means:

- 7 - Every Time
- 6 - Usually (In about 90% of the chance I could have done)
- 5 - Frequently (In about 70% of the chance I could have done)
- 4 - Sometimes (In about 50% of the chance I could have done)
- 3 - Occasionally (In about 30% of the chance I could have done)
- 2 - Rarely (In less than 10% of the chance I could have done)
- 1 - Never

Results and discussion

The result of the study is supported by what Soreney (2015) stressed in his study that majority of the nurses are still young and can be fast in the provision of health care upon the occurrence of a disaster. Gierlach et al. (2010) affirmed that young nurses are more aggressive than older ones; however, the actions of the more experienced ones are more accurate and faster than the novice nurses. Young nurses are aggressive, but the older ones are decisive. Zamanzadeh et al. (2013) posited that nursing is still perceived as a female profession. Moreover, Curtis et al. (2009) concluded that the number of men entering the nursing profession is on the rise, the gender imbalance continues to exist for men in nursing as more male than female nurses are leaving the profession. Grabowski and Stevenson (2008) noted that civil status in the nursing profession have an impact on the nurses' performance of functions, specifically during catastrophic situations. The most striking finding is that nurses with families devote less time in these situations than those who are single and without hectic family responsibilities. Hence, the responsibilities toward the immediate family hinder nurses to spend more time in disaster situations.

Table 1. *Profile of the respondents*

Age	Frequency	Percentage
21- 30	28	28.00
31- 40	33	33.00
41- 50	23	23.00
51- 60	13	13.00
61 and above	3	3.00
Sex	Frequency	Percentage
Male	33	33.00
Female	67	67.00
Civil Status	Frequency	Percentage
Single	53	53.00
Married	44	44.00
Widow	3	3.00
Separated	0	0.00
Education	Frequency	Percentage
BSN	89	89.00
MA / MS	11	11.00
PhD	0	0.00
Working Experience	Frequency	Percentage
1-3 years	35	35.00
4-6 years	38	38.00
7-9 years	16	16.00

On the other hand, Piercey (2012) averred the significance of training and continuing education in the nurses' further acquisition of professional competencies. As professionals who solve problem for service in their particular discipline, nurses should continue striving for professional growth and development through enhancement of technical or specialized knowledge and skills. Premised on this, nurses who are more adequately prepared tend to improve caring services to optimum level which redounds to the benefit of the clients. It is often assumed that the level of expertise of a nurse is defined by the number of years that the nurses have in the said profession. This is favored by Suserud and Haljamae (1997), as they stressed that nurses who lack experience in this area would not be able to operate effectively in disaster situations. Landesman (2005), cited that the less experienced ones is given lighter assignments than those who have been in the field for a longer period of time. In the most critical situations, the veterans are assigned to take over while the novices assist them. Furthermore, the study of Bautista (2008), backed the differences in terms of hospital assignments and in terms of years of working experience in the nursing profession affect the nurses' performance in disaster situations since the more complicated functions were

revealed to have been delivered to a very satisfactory level by nurses who have stayed longer in the profession, while the novices perform the same functions to a moderately satisfactory level.

Table 2. *Perception of the Respondents on Disaster Prevention and Mitigation*

Disaster Prevention and Mitigation	Mean	Interpretation
1. Participates in disaster risk reduction and management plan drafting and emergency planning for disaster situations in my workplace	5.33	Frequently
2. Assists in policy development to prevent future disasters or implement quality control in response to disaster situations	5.02	Frequently
3. Conducts health teaching activities with patients, who are already in the hospital to increase their awareness in disaster risk reduction and management	4.91	Sometimes
4. Contributes a part in one of the following educational activities on a regular basis: continuing education classes and seminars or conferences dealing with disaster risk reduction and management	5.22	Frequently
5. Assists in strengthening the overall capacity and capability transport and communication in my workplace	4.83	Sometimes
6. Updates disaster risk reduction and management plan on regular basis in my workplace	4.78	Sometimes
7. Coordinates with concerned agencies or offices in allocating adequate funds to ensure the functionality of the hospitals during disaster situations	5.24	Frequently
8. Ensures the availability of medical personnel and necessary resources to support the maintenance of the hospital during disaster situations	5.42	Frequently
9. Conducts a regular assessment of the medical supplies and equipment in my workplace	5.24	Frequently
10. Expresses my judgment on improving and evaluating the structural quality of the hospital in collaborating with other members of the health care team	5.38	Frequently
Overall Mean	5.14	Frequently

According to Moabi (2009), the perception of nurses towards disaster prevention and mitigation determines the uptake of the necessary plan to improve their skills and knowledge about disaster risk reduction and management. Nurses believe that they need to have insight on disaster risk reduction and management. This preparation includes that the plans are regularly updated. The staff should be trained and simulation should frequently occur in the hospital. Disaster drills should be conducted in the hospital. If frequently done, impending problems can be picked up early and addressed in time. Disasters are likely to happen in hospitals and having a right attitude towards disaster management that effective disaster risk reduction and management can occur. The effective execution of a disaster risk reduction

and management plan depends entirely on how the health personnel respond to it.

Coppola (2011), stated that planning and conceptualization are one of the most important areas of prevention and mitigation. Without plans, there could be no better realization of activities. This only shows that in order to come up with a rich management for disaster, planning ahead of time is one of the most important aspect nurses should be prepared for.

Maurer and Smith (2013), states that the purpose of disaster planning is to provide the policies, procedures, and guidelines necessary to protect lives, limit injury, and protect property immediately before, during and after disaster event. A comprehensive emergency management plan addresses the phase of disaster management.

Table 3. *Perception of the Respondents on Disaster Preparedness*

Disaster Preparedness	Mean	Interpretation
1. Participates in the regular inventory of medical supplies and equipment	5.17	Frequently
2. Ensures the establishment of communication links with other members of the health sector for effective coordination and response during disaster situations	5.15	Frequently
3. Extends time reading to be more knowledgeable about disaster risk reduction and management	5.12	Frequently
4. Attends seminars and trainings regarding the updates on disaster risk reduction and management	4.77	Sometimes
5. Undergoes capacity building activities and routinely review and update current operation guidelines and procedures on disaster risk reduction and management	4.86	Sometimes
6. Establishes a proper coordinating procedures with other health facilities in terms of collaboration of patients' care during disaster situations	5.41	Frequently
7. Attends drill simulation to be aware of the disaster risk reduction and management in my workplace	4.92	Sometimes
8. Attends assembly with other members of the health team regarding the matter of necessary resources, funds, and medical staff during disaster situation	5.21	Frequently
9. Identifies the health risk in my patients and to myself as a healthcare provider when disaster strikes, in collaboration with other members of the health team on developing plans to reduce identified risk	5.37	Frequently
10. Enlists important telephone numbers, such as (emergency ambulances, referral hospitals etc.) for possible transport of patients for continuity of care	5.26	Frequently
Overall Mean	5.12	Frequently

According to Moabi (2008) with the growing threat of naturally occurring or man-made disasters, many institutions have begun to develop some form of preparedness and response plans. Among those in the front lines

of preparedness are hospitals and medical professions who will be among the first responders in the event of such a disaster. Preparedness is one of the major components of disaster response. Nurses comprise the largest healthcare workgroup in most countries and are at the forefront of the healthcare response to disasters. The objective of disaster preparedness is to ensure that appropriate systems, procedure, and resources are in place to provide prompt effective assistance to disaster victims, thus facilitating relief measures and rehabilitation of services. It includes all of the activities that need to be carried out prior to a disaster to ensure that disaster response activities run as smoothly as possible. This typically means that disaster plans are in place, understood and ready to be used.

Moreover, according to Stanhope and Lancaster (2013), a key to disaster preparedness is that the plan must be kept both realistic and simple with backups contingencies integrated throughout. The reason for this are that, plans never exactly fit the disaster as it occurs and all plans never must be implemented no matter which key members of the disaster team are present at that time.

Adelman and Legg (2009), add to this by saying that disaster training should be included in all staff orientation sessions, included in annual competency updates, practiced under real-life circumstances, evaluated for changes, and plans redesigned based on lessons learned during drills to ensure continuous quality improvement. Having plans tailored to different types of disasters can ensure that hospitals are well prepared for any type of emergency and by being prepared; facilities can decrease the miscommunication and confusion during a real disaster. Making sure that healthcare providers such as nurses get the training they need is extremely important.

Table 4. *Perception of the Respondents on Disaster Response*

Disaster Response	Mean	Interpretation
1. Recognizes the limits of my knowledge, skills, and authority as a health care provider to act in disaster risk reduction and management	4.95	Sometimes
2. Maintains calmness and composure in providing care despite a huge number of patients during disaster situations	5.38	Frequently
3. Triage patients that come in the Emergency Department during disaster situations	5.25	Frequently
4. Collaborates with co- healthcare provider in managing patients and rendering quality patient care during disaster situations	5.46	Frequently
5. Ensures the safety and proper ongoing treatment for all patients who are already in the hospital during disaster situations	5.31	Frequently
6. Maintains sound judgment even when there are huge number of patients coming in the Emergency Department during disaster situations	5.18	Frequently

7.Maximizes the use of medical resources during disaster situations	5.10	Frequently
8. Performs care of victims in a unified and collaborative manner with other rescue workers	5.19	Frequently
9. Ensures own safety as a healthcare provider to be able to effectively provide a quality patient care during disaster situations	5.28	Frequently
10.Coordinates with other health facilities for possible transport of patients during disaster situations	5.29	Frequently
Overall Mean	5.24	Frequently

Based on the above data, the assessment on the disaster response as perceived by government hospital nurses has an interpretation of ‘Frequently’, for its overall mean of 5.24. As shown on the table, government hospital nurses ensure their own and their patient’s safety during disaster situations. They maintain their composure and sound judgment despite of huge number of patients, in collaboration with other healthcare providers in rendering quality patients’ care during disaster situations.

Powers and Daily (2010), affirm that nurses comprise the largest healthcare workgroup in most countries and are at the forefront of the healthcare response to disasters. Nurses often facilitate communication and coordinate care among members of the health care team, patients, and their families during a disaster. Clear communication is an essential element of disaster planning and response. This includes formal and informal communication (verbal and written) and electronic and paper documentation. Nurses and other health care providers should collaborate with officials and other health facilities involved at all levels of disaster response. Nurses are routinely assigned to assist in triage and screening for health problems, administration of first aid to those patients affected by disaster situations.

Furthermore, Howes et al. (2012), cited that nurses should be knowledgeable about his or her role during disaster. This may include triage, coordination of the first aid response team, and direct hands-on care to victims of the emergency. As licensed health care professionals, they should respond to all serious adverse events that threaten the health, safety, or well-being of a population. As advocates for safety, they must address new challenges. The nurse has an important role before, during, and after an emergency.

According to Veenema et al. (2008), nurses have demonstrated their value in numerous disaster situations because they possess the knowledge, skills and abilities that support the humanitarian efforts and positively contributed to a disaster response. However, the challenges faced in dealing with the complexity of disasters requires that each nurse acquire a knowledge base and minimum set of skills to enable them to plan for and respond to a disaster in a timely and appropriate manner.

Table 5. *Perception of the Respondents on Disaster Rehabilitation and Recovery*

Disaster Rehabilitation And Recovery	Mean	Interpretation
1. Re-establishes a guideline on disaster risk reduction and management plan for improvements in workplace during disaster situations	5.13	Frequently
2. Develops a healthcare team as an initial responder during disaster situations	5.10	Frequently
3. Improves a coordination procedures to other healthcare facilities for possible transport of patients during disaster situations	5.17	Frequently
4. Enhances the practices and drills on disaster risk reduction and management	5.40	Frequently
5. Restores the overall capacity and capability of the healthcare services in my workplace	5.34	Frequently
6. Provides leadership in planning and reconstruction activities to ensure that patient needs are met	5.22	Frequently
7. Performs the advocacy role, which is to ensure that all needs of patients are being met during the recovery phase	5.20	Frequently
8. Works with the recovery coordinators to restore, redevelop and revitalize communities and healthcare facilities affected by disasters	5.29	Frequently
9. Implements referrals to appropriate health care providers, government or relief agency for food, medications, medical supplies and equipment, specialized care, and long-term medical or mental health needs or financial assistance to meet the cost of care for the victims of a disaster	5.25	Frequently
10. Re- establishes a team for the conduct of regular inspection and maintenance of healthcare facilities and resources	5.30	Frequently
Overall Mean	5.24	Frequently

Seroney (2011), affirms that during the recovery and rehabilitation stage, the nurse evaluates the disaster plan and champions required changes to improve the management of the disaster and the disaster's impact on the population. Evaluation is a critical component in mitigating the effects of future disasters. Nurses have a responsibility for providing documentation and evaluating the process while actively participating in follow-up activities that include community planning and development.

Bruley (2008), states that nurse have a role in the recovery of the health care infrastructure. Without the health care infrastructure, the community will struggle to survive. Temporary medical services must be transitioned back to permanent facilities. The nurse must provide leadership in planning and reconstruction activities to assure that patient needs can be met. There may also be a need for additional services as a result of the disaster. The nurse is the one who can identify and advocate for patient needs. The advocacy role is

particularly important during the recovery phase to assure that all of the needs are being met. Recovery includes restoring vital services, rebuilding infrastructure and housing, and meeting the needs of the population while assisting them to restore their lives. Recovery is a long-term process that requires both short-term and long-term goals for rehabilitation, reconstruction, and sustainable development. Further, the nurses also act as teachers and guidance counselors through educating the victims in terms of caring for their health and avoiding unhealthy practices. In such disastrous situations, the nurses’ roles are truly essential.

Table 6. *Test of Significant Difference on the Assessment of the Disaster Risk Reduction and Management by Government Hospital Nurses as to Profile Variables*

	Source	SS	Df	MS		Discussion/ Interpretation
Age	Between-treatments	643.9491	4	160.9873	SD= 1.3986	*F = 239.95683; P =.00001. Reject Ho Significant
	Within-treatments	332.096	495	0.6709	CV=2.39	
	Total	976.0451	499			
Gender	Between-treatments	994.9659	4	248.7415	SD= 1.5654	**F = 540.53819; P=<.00001 Reject Ho Significant
	Within-treatments	227.786	495	0.4602	CV=2.39	
	Total	1222.7519	499			
Civil Status	Between-treatments	1093.1443	4	273.2861	SD =1.631	***F = 577.27626 P=<.00001 Reject Ho Significant
	Within-treatments	234.336	495	0.4734		
	Total	1327.4803	499			
Highest Educational Attainment	Between-treatments	1317.9572	4	329.4893	SD =1.7546	****F = 756.62353 P=<.00001 Reject Ho Significant
	Within-treatments	215.1238	494	0.4355		
	Total	1533.081	498	Total		
Years of Experience in the Nursing Profession	Between-treatments	797.2675	4	199.3169	SD =1.4831	*****F = 328.59245 P=<.00001 Reject Ho Significant
	Within-treatments	300.256	495	0.6066	CV=2.39	
	Total	1097.5235	499			

The above results revealed that there was a significant difference on the respondents’ perception of disaster risk reduction and management when grouped according to their profile variables. According to la Cruz and Del Pozzo (2009), a significant difference between the nurses’ demographic profile variables and their performance of nursing functions on disaster risk reduction and management. More specifically, she identified a close level of

performance among nurses grouped by age, educational attainment, civil status and length of experience in the nursing profession. The variations in the demographic profile of the respondents have an impact on their assessment of their roles, preparedness and management during disaster situations.

Gierlach (2010), also stated that when nurses are grouped by demographic profile variables have both similarities and differences in their responses to disaster situations. Based on age, gender, civil status and length of nursing experience have an impact on the nurses' performance of functions, specifically during catastrophic situations. Young nurses are of course more aggressive than older ones; however, the actions of the more experienced ones are more accurate and faster than the novice nurses. Young nurses are aggressive, but the older ones are decisive. Regardless of the variations in their demographic profile variables, the nurses manifest significant awareness of their professional nursing roles during disaster. Awareness of their specific roles can change or expand horizons and functions according to the capability and specialization of each group of nurses. Nurses can help to identify actions that will help reduce the effects of the disaster through a variety of roles and based on each one's specialization.

Conclusion

There was a significant difference on the perception of government hospital nurses on disaster risk reduction and management when grouped according to their profile variables. Specifically, government hospital nurses' perception on disaster risk reduction and management phases was affected by their education, training and work experiences.

Public healthcare systems need to assure that all healthcare staff including government hospital nurses are prepared for disaster situations. Regardless of differences on demographics, nurses should understand the scope of their responsibility and role in preparing for, responding to, managing and recovering from disasters impacts.

Recommendations

Government hospital nurses, as front liners during emergency and disaster situations in the hospital, should continue to improve their knowledge and skills on disaster risk reduction and management by attending seminars and relevant trainings. They should maintain the disaster management plan and regularly update their operation guidelines and procedures.

A replicate study was also recommended to further test validity and elicit reliability for data consistencies.

Moreover, the Department of Health (DOH) should continue to conduct seminars and trainings that are necessary to enhance the practices, knowledge, and skills of nurses regarding the latest trends on disaster risk

reduction and management. Adequacy of knowledge and practice, and portraying positive attitude were driven by being involved in disaster response and attending disaster-related education. It is therefore paramount for health sectors to conduct disaster-related education/training for front-liners such as government hospital nurses to improve their knowledge and practice towards disaster risk reduction and management.

Furthermore, nursing curriculum should also be revisited to enhance the delivery of academic and clinical instruction about disaster risk reduction and management to students.

References:

1. Adelman, D. S., & Legg, T. J. (2009). *Disaster nursing: A handbook for practice*. Jones and Bartlett Publishers.
2. Bruley M C Federal Emergency Management Agency. FEMA disaster costs. Available at: www.fema.org/library/df_7.shtm. Accessed January 02, 2008
3. Coppola, D. P. (2011). The management of disasters. *DP Coppola, Introduction to international disaster management*, 1-35.
4. Curtis, L., Robinson, S., & Netten, A. (2009). Changing patterns of male and female nurses' participation in the workforce. *Journal of Nursing Management*, 17(7), 843-852.
5. Davis, L. L. (1992). Instrument review: Getting the most from a panel of experts. *Applied nursing research*, 5(4), 194-197.
6. Federal Emergency Management Agency (FEMA). 2013. Presidential Policy Directive (PPD) 8 components: *National preparedness goal, National preparedness system, National planning frameworks*. <http://www.fema.gov/preparedness---1/learn---about --presidential---policy---directive---8#NPF>
7. Gierlach, E., Belsher, B. E., & Beutler, L. E. (2010). Cross-cultural differences in risk perceptions of disasters. *Risk Analysis*, 30(10), 1539-1549.
8. Grabowski, D. C., & Stevenson, D. G. (2008). Ownership conversions and nursing home performance. *Health services research*, 43(4), 1184-1203.
9. Howes, M., Grant-Smith, D., Reis, K., Tangney, P., Bosomworth, K., Heazle, M., ... & Burton, P. (2012). The challenge of integrating climate change adaptation and disaster risk management: lessons from bushfire and flood inquiries in an Australian context.
10. la Cruz-Reyna, D., & Martin Del Pozzo, A. L. (2009). The 1982 eruption of El Chichón volcano, Mexico: eyewitness of the disaster. *Geofísica internacional*, 48(1), 21-31.
11. Landesman, L. Y. (2005). *Public health management of disasters: the*

- practice guide*. American public health association.
12. Maurer, F. A., & Smith, C. M. (2013). *Community/public health nursing practice: Health for families and populations*. Elsevier Health Sciences.
 13. Moabi, R. M. (2009). *Knowledge, attitudes and practices of health care workers regarding disaster preparedness at Johannesburg hospital in Gauteng Province, South Africa*(Doctoral dissertation).
 14. National Procedures Institute, 2017. <https://www.npinstitute.com/public-vs-private-hospitals-s/1852.htm>
 15. Piercey K. (2012). An Article. *Disaster education and training of emergency nurses in South Australia*. *Australasian Emergency Nursing*, 12 (3), 86-92.
 16. Polit, D. F., & Beck, C. T. (2006). The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in nursing & health*, 29(5), 489-497.
 17. Powers, R., & Daily, E. (Eds.). (2010). *International disaster nursing*. Cambridge University Press.
 18. Seroney (2015). *The Role of a Nurse in Disaster Management at Kapsabet District Hospital: A Global Health Concern*.
 19. Stanhope, M., & Lancaster, J. (2013). *Foundations of nursing in the community: Community-oriented practice*. Elsevier Health Sciences.
 20. Suserud, B. O., & Haljamäe, H. (1997). Acting at a disaster site: experiences expressed by Swedish nurses. *Journal of Advanced Nursing*, 25(1), 155-162.
 21. The United Nations Office for Disaster Risk Reduction *Terminology*. From: www.unisdr.org/eng/library/lib-terminology-eng%20home.htm Accessed: June 2015.
 22. Veenema, T. G. (2008). *ReadyRN E-Book: Handbook for Disaster Nursing and Emergency Preparedness*. Elsevier Health Sciences.
 23. World Health Organization. *Disaster risk management for the health overview fact sheet*. Geneva, Switzerland: WHO Global Platform; 2011.
 24. Zamanzadeh, V., Azadim, A., Valizadeh, L., Keogh, B., Monadi, M., & Negarandeh, R. (2013). Choosing and remaining in nursing: Iranian male nurses' perspectives. *Contemporary nurse*, 45(2), 220-227.