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An Evidenced Based Practice Perspective Regarding The Role Of The Nurse Practitioner In Disaster Preparedness And Education

Angeles Lynn Russell Bayou
Mississippi University for Women

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**AN EVIDENCED BASED PRACTICE PERSPECTIVE REGARDING
THE ROLE OF THE NURSE PRACTITIONER IN DISASTER
PREPAREDNESS AND EDUCATION**

being

An Evidenced Based Practice Project Presented to the Graduate Faculty
of Mississippi University for Women in
Partial Fulfillment of the Requirements for
the Degree of Master of Science in Nursing

by

Angeles Lynn Russell Ballou

BSN, University of Southern Mississippi

Date _____ Approved Bailey D. Moore
Graduate Studies Director

Approved May Patricia Curtis
Graduate Program Director

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The Graduate Committee of Angles Lynn Russell Ballou

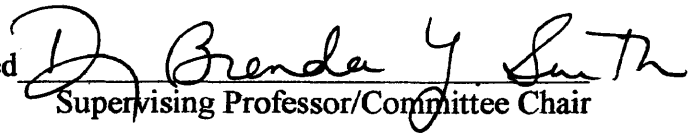
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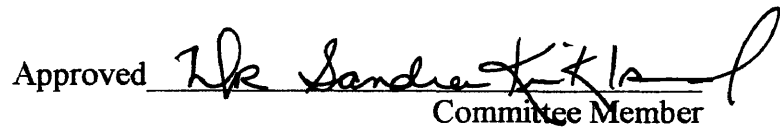
Master of Science in Nursing

Date 7-31-06

Approved


Supervising Professor/Committee Chair

Approved


Committee Member

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Committee Member

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DEDICATION

There are many people that I would like to thank for helping me along the way with this educational endeavor. To my mother, Christine Russell, who took care of the kids and offered herself selflessly throughout my career. Mom, you have been a great inspiration and I thank you and Daddy for the strict discipline. I would not be at this point in my career without you drilling me about the importance of education. My kids, LaChris, Jordan, Edward, Joshua, T.J., A.J., and Nicholas, you all have been so patient with me, especially this last year. You guys made a lot of sacrifices so that I could continue my education. Thank you for all the help of cleaning and cooking. Thank you all for not complaining. Ed, you gave up going to college this summer, put your life on hold to help see about your younger brothers, that was a great sacrifice. T.J. you have really matured this year. Thank you for being supportive and encouraging me. You don't realize how much you have helped me through our talks. A.J. and Nick, you two have been so patient and understanding that Mom could not do a lot of things this past year but I will make up for it. Jordan, you have always been there. Joshua, even though you are not here physically, your spirit and characteristics remain with your brothers. You taught them so much before you left this earth. You had so much enthusiasm and love for family. I miss you son. A special thanks to Lachris, my oldest son, you really surprised me and took on a great deal of responsibility this year, financial and otherwise, to help me through school. You have really become a reliable young man and I am proud of you. I want to thank all my sisters and brothers, who have been there for me at different times in life.

A special thanks goes to my late husband Mr. Terry Ballou. Terry, there has been a lot of sleepless nights and wandering days since August 04, 2005. I have missed you so dearly. Even though you are gone, in my dreams, you have managed to encourage me. You left an everlasting impression on my life. You taught me that anything was possible if I approached it logically. You are the reason I am a nurse today. You always promised to take care of me and I thank you for the sacrifices. I know you are looking down on me with that beautiful smile. I thank God for the opportunity to have loved you and been loved by you. They do not make them like you anymore. You will always be my one and only true love. I wish to thank my Grandfather, the late Mr. Abel Russell, for giving me the spiritual guidance, you were my hero. Thank you for teaching me so much about the bible and how to depend on God. Thanks to Dr. Brenda Smith, you gave me a lot of great information.

Most of all, I would like to not only thank God but to dedicate my all to him. Merciful and gracious master, thank you for being with me through good and bad times, thank you for believing in me when I did not believe in myself, I know that all that I am is strictly because of you.

**EVIDENCED-BASED PRACTICE CONSIDERATIONS FOR THE ROLE OF
THE NURSE PRACTITIONER IN DISASTER**

PREPAREDNESS AND EDUCATION

Angeles Lynn Russell Ballou, MSN(c), RN

Mississippi University for Women, 2006

Supervising Professor: Dr. Brenda Y. Smith

Abstract

Disasters have plagued the earth since the beginning of time and will continue to be a part of life as long as the earth exist. Disasters can be either natural or man made, regardless of which one, they are always devastating to mankind. The risk of disasters, both natural and man made, has increased tremendously in recent years. The increasing risk of terror attacks and worldly unrest has become commonplace in our society, causing federal, state, and local governments to act on disaster planning and education. Most of the literature has revealed weaknesses in the nation's preparedness for disaster, especially the health care system. Nurses, especially Advanced Practice Nurses such as nurse practitioners, who make up the largest segment of the healthcare community, need special training and education to perform proficiently. With this in mind, the purpose of this project is to bring awareness and knowledge regarding the value and significance of the role of the nurse practitioner in disaster preparedness. The theoretical foundation that guided this project regarding the role of the nurse practitioner is that of Patricia Benner's Novice to Expert philosophy. Maslow's Heirarchy of needs supplemented the project in reference to disaster preparedness.

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CHAPTER I

Dimensions of the Problem

Disasters have plagued the earth since the beginning of time and will continue as long as the earth exists in its present form. Disasters can be either man-made or natural, regardless of which one; they are always devastating to mankind. According to Halpern and Chaffee (2005), “disasters are by definition unpredictable, occur in different locations, are caused by different mechanisms, and if they produce a large number of victims, they can place sudden and significant stresses on health care systems and health care workers” (p. xiv).

The risk of both man-made and natural disasters has increase tremendously in recent years. With the increasing threat of terrorist attacks and astronomical natural disasters, government officials nationally and internationally have begun to place disaster preparedness and education in the forefront. After the September 11th attack and Hurricane Katrina the world began to recognize that a problem existed with our lack of disaster education, especially in the health care realm. This lack of proper training and education has caused mass casualty incidents to be chaotic and with a decreased level of quality care provided by health care workers.

Problem Statement

“In the past 40 years, there have been over 6000 documented natural disasters affecting more than five billion people”(Lettiere,2006). From 1985 through 2005, the estimated cost of damages to the United States caused by natural disasters alone has been over 500 billion dollars. Hurricane Katrina alone cost 100 billion dollars making it

the most costly natural disaster in the history of the United States (Lott & Ross, 2005).

The Shri Lanka 2004 Tsunami and Hurricane Katrina caused the entire world to wake up and realize there was a problem with disaster training and preparedness on local, state, national, and international levels. All entities of the community were affected by these disasters. The healthcare system and workers suffered tremendously and were not prepared for the magnitude of these mass casualty incidents.

According to Slepski (2005), although the nation has invested billions of dollars in disaster preparedness, there continues to be a gap of knowledge and skills regarding large scale emergencies. Most of the literature has revealed “weaknesses in the nation’s preparedness, many in the health sector...healthcare professionals are considered to be the first line of emergency defense. The goal of this care is to deliver acceptable quality while saving as many lives as possible (p. 419). Thus, the problem statement that was generated for the scope of this investigation concerns the role of the nurse practitioner in facilitating disaster preparedness and education.

Statement of Purpose

Nurses make up the largest segment of the healthcare community; therefore they should be trained proficiently to handle disasters. The nurse practitioner, an advanced practice nurse, especially needs to be trained in this area because of her role as a leader and educator in the nursing field. “Disaster preparedness requires resources: money, time, training, equipment, planning, exercise, and people. Many healthcare organizations find themselves squeezed in the center of dual pressures: preparedness versus profit” (Halpern & Chaffee, 2005, p. xiv).

“The role of the advanced practice nurses (APNs) including the nurse practitioners (NPs), in disaster planning and response is not defined well. Although APNs and NPs have provided health care services during disasters, little appears in the literature about their role” (Cole, 2005, p. 511). Therefore, the purpose of this project is to examine the role of the nurse practitioner in disaster preparedness.

Significance of the Study

The current level of knowledge regarding the role of the nurse practitioner in disaster preparedness and education is limited. A computer search utilizing CINAHL, MEDLINE, and COCHRANE, revealed only several articles on this subject. Terms utilized in the search included the following:

Table 1

Summary of Literature Searches

| Search Terms | Number of Citations | Database |
|--|---------------------|----------|
| nurse practitioner and disaster preparedness | 0 | CINAHL |
| | 0 | MEDLINE |
| | 0 | COCHRANE |
| nurse practitioner role and disaster | 2 | CINAHL |
| | 2 | MEDLINE |
| | 0 | COCHRANE |
| disaster preparedness and Benner | 0 | CINAHL |
| | 0 | MEDLINE |
| | 0 | COCHRANE |
| NP role and Benner | 0 | MEDLINE |

| | | |
|----------------------------------|---|----------|
| | 0 | CINAHL |
| | 0 | COCHRANE |
| NP and Benner | 0 | CINAHL |
| | 0 | MEDLINE |
| | 0 | COCHRANE |
| NP and disaster education | 4 | CINAHL |
| | 4 | MEDLINE |
| | 4 | COCHRANE |
| NP and Maslow's Heirarchy | 1 | CINAHL |
| | 1 | MEDLINE |
| | 0 | COCHRANE |
| disaster preparedness and Maslow | 0 | CINAHL |
| | 0 | MEDLINE |
| | 0 | COCHRANE |

Note. CINAHL = Cumulative Index to Nursing and Allied Health Literature, MEDLINE = Medical Literature Online, COCHRANE = Cochrane Library (Cochrane Database of Systematic Review, Cochrane Database of Abstracts of Reviews of Evidence, and Cochrane Clinical Trials Register).

Clinical significance regarding the role of the nurse practitioner in disaster preparedness is focused on the need for cost effective, high quality care. Nurse practitioners are in a unique position to deliver high quality education and care to the healthcare community and the general public. Economic outcomes are important in

relation to healthcare cost. The nurse practitioner can play an important role in decreasing health care cost prior to, during, and in the recovery phase of a disaster, simply by becoming proficiently skilled and knowledgeable in disaster care.

Theoretical Foundation

Benner (2001) states that little has been studied regarding “that knowledge embedded in actual nursing practice – i.e., that knowledge that accrues over time in the practice of an applied discipline. Such knowledge has gone uncharted and unstudied because the differences between practical and theoretical knowledge have been misunderstood” (p. 1). Benner stages the nursing experience from novice to expert. The level of understanding and reasoning goes from a lower level (novice) to a higher level (expert). The new graduate nurse practitioner will become a novice once again by gaining a new role. The approach of the teaching and coaching function correlates with disaster education and preparedness. Benner (2001) states, “Teaching and learning transactions require great skill under the best of circumstances, but they take on new demands and require different skills when the learner is threatened and ill. Expert nurses have learned to communicate and teach in extreme situations. And in this teaching they are forced to use themselves, their attitudes, tone of voice, humor, skill, and a variety of approaches to the patient” (p. 78)

In a full blown emergency, the nurse functions as the generalist, coordinating the functions of various specialists. The patient is indeed fortunate if an experienced nurse is available to oversee the whole picture so that errors and duplication of efforts are prevented in situations where rapid responses are imperative.

This area of skilled practice includes the ability to grasp the problem quickly, to intervene appropriately, and to mobilize the help available . Expert nurses often noted how they are aware of the rest of the staff, the total picture of patient needs, and the resources available to them. They are the overseers of the total picture; they are aware of and use the layers of available resources. ...Expert nurses function as orchestrators of a complex situation, keeping all fronts going, all bases covered. They are particularly able to single out the problems that need managing, to set priorities quickly, and to delegate responsibility for them to the available staff. They know how to function in the face of unpredictable situations and adjust their plans to the contingencies of the situation. Furthermore, they have confidence in their own ability and rarely panic in the face of a breakdown. It takes many straws to break the backs of experts. Their rich backlog of experience enables expert clinicians to create order in the midst of chaos (Benner, 2001, pp. 110-113).

Nurse practitioners no matter what stage they are in on the ladder of novice to expert could offer a wealth of information to patients and other healthcare workers. The novice NP could comfort and educate clients in a disaster performing minor procedures. The expert on the other hand could take the lead role triaging, treating and directing patient care in a large scale emergency. The expert could also educate other nurses and health care workers through community disaster preparedness courses and working with agencies such as the American Red Cross.

Abraham Maslow's Hierarchy of Needs also guided this project under the context of what happens to all people during a disaster. "A disaster is a catastrophic event that often

leads to great destruction and loss.....causing excessive morbidity and mortality” (Cox & Briggs, 2004, p. 16). Maslow’s theory states that there are several human needs based on two groups of needs, deficiency and growth. He proposed that the very basic needs of shelter, food, water, and air must be met before one can move to a higher level of need. Maslow’s Hierarchy has five levels: physiological, safety/security, love and belonging, self esteem, and self actualization (Huitt, 2004). At one point or another in a disaster, healthcare workers, the community, and those affected by the incident travel through all the levels of hierarchy. Nurse practitioners need to be educated and properly trained in order to provide these basic needs. They must also recognize their own needs during a disaster. Patillo (2003) reminds the nursing profession that “safety is just above basic physiologic needs. When thinking of surviving a major disaster and helping out as nurses, our priorities have to descend from their usual lofty goals of meeting “self esteem and self actualization needs to basics (eg, washing our hands and making sure we have clean water and sufficient light)” (p. 271).

Definition of Terms

For the scope of this investigation, the following terms are defined:

Disaster Preparedness

Theoretical. For the purposes of this project, disaster preparedness is theoretically defined as organized processes that minimize the adverse effects of a hazard through effective precautionary actions.

Operational. For the purpose of this project, disaster preparedness is operationally defined as a plan to reduce the impact of a mass casualty incident.

Nurse Practitioner Role

Theoretical. For the purpose of this project, nurse practitioner role is theoretically defined as the scope of practice that a registered nurse with an advanced practice degree engages. These scopes are defined by the NPs' State Board of Nursing.

Operational. For the purpose of this project, nurse practitioner role is defined as a licensed certified master's prepared registered nurse who has the duties of managing the care of chronic and acute illnesses in a similar manner as a physician by planning and implementing care under the guidelines of the State Board of Nursing.

Disaster Education

Theoretical. For the purpose of this project, disaster education is theoretically defined as core competencies of skill and knowledge developed to aid in successful responses in the event of a mass casualty incident.

Operational. For the purpose of this project, disaster education is operationally defined as a designed course with the core concepts *of* large and small scale emergencies provided to the public and healthcare workers.

Research Questions

For the purpose of this study, the following research questions were generated:

1. According to the literature, what is the level of Advance Practice nursing knowledge regarding disaster preparedness?
2. According to the literature, what is the role of the nurse practitioner in disaster preparedness?

Delimitations

Literature was delimited, for the purpose of this integrative literature review, to the following:

1. Literature that pertains to disaster preparedness and education.
2. Literature that is available in the English language or translated into English abstracts.
3. Literature available through CINAHL, MEDLINE, and COCHRANE Libraries.
4. Literature that is available through the Mississippi University for Women Library and Interlibrary loan program.

Limitations

For the purpose of this investigation a particular limitation identified is that the information obtained cannot be generalized beyond the scope of the research reviewed. The generalizability of the findings is further impacted by the lack of nursing research related to the role of the nurse practitioner in disaster preparedness.

Summary

“A disaster is a calamitous event of slow or rapid onset that results in large-scale physical destruction of property, social infrastructure, and human life. It results in the existing resources and coping mechanisms of individuals, groups, communities, and societies being overwhelmed” (Deeny & McFretidge, 2005, p. 432). The nurse practitioner possesses skills and knowledge to meet the needs of the community and health care system during a disaster. Although documentation of increased awareness of the need for disaster preparedness and education exist, there is still a knowledge gap that

is present in society regarding disasters. The role of the nurse practitioner can be pivotal in the future of mass casualty incidents.

CHAPTER II

Review of Literature

This investigation is an integrative literature review which summarizes research on a concept of interest by placing the research problem in context and identifying gaps and weaknesses in prior studies to justify new investigations (Polit & Beck, 2004). A systematic review of the literature was conducted on the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the United States National Library of Medicine (MEDLINE), and the Cochrane Library. For the purpose of this investigation, data-based and theory-based manuscripts were reviewed and critiqued concerning disaster preparedness and education. In this chapter, an overview of the study variables is presented as it has emerged from the developing knowledgebase.

An Overview of Healthcare Literature Regarding Disaster Preparedness and Education

According to a data-based manuscript by Shadel, Chen, Newkirk, Lawrence, Clements and Evans (2004), indexed in CINAHL, a number of pertinent conclusions were made concerning the bioterrorism educational needs of public health professionals. The authors reviewed the risk perceptions of bioterrorism, extent of bioterrorism training, and preferred methods of preparedness education in the public healthcare realm. A qualitative telephone survey was conducted, followed by pre-testing and post testing of the group. Of the 3554 petitioned participants only 3074 responded. A weakness of the research was that not all of the healthcare professionals were represented equally. Nursing and administrators were the majority of the respondents and therefore making

the study biased. A strength of the study is that it explores the educational needs of all healthcare professionals in regards to preparedness education and it did target the largest forces in the healthcare community, nurses and administrators. The research did provide a foundation for further study in this area; however, the sampling may impact external validity. The conclusion was made that ongoing and updated standardized preparedness education is a necessity to deal with the weaknesses in the public health system.

A data based article by Moore, Daniel, Linnan, Campbell, Benedict, And Meier (2004), indexed in CINAHL, investigated how social capital, social cohesion, and collective efficacy affected community preparedness, response, and recovery after Hurricane Floyd. The investigators used a multilevel design involving qualitative research. Data was obtained through several methods: focus groups, key-informant interviews, newspaper reports and surveys of individuals. The key concepts were preparedness, response, and recovery. A weakness in the study was that it only focused on five of the 16 counties affected by the flood. Also, the terms were not defined clearly to the participants. The results were that the measurements of the concepts need improvement. Investigators further concluded that the disaster cycle is dynamic and depending on what phase the participant is in may alter their perception of preparedness, response and recovery.

A data based article by Mann, MacKenzie, and Anderson (2004) indexed in CINAHL, suggested that statewide trauma systems may provide an outline for medical disaster readiness. Soon after September 11, 2001, the investigators did a cross sectional survey of all 50 states and assessed five components of disaster readiness: statewide disaster

planning, coordination, training, resource capacity, and preparedness for biological/chemical terrorism. A weakness of the study was the small sample size. The strength was that it defined the five concepts consistently. The results were that all states had some type of disaster plan but only 48% ever tested them. Half of the states offer disaster training courses but only 38% includes a bioterrorism component and only ten percent require medical professionals to attend. All of the states have a disaster operation center but only 36% have a communication system that is connected to health and medical units. Mann, MacKenzie and Anderson concluded that the disaster plans are in place by the states but they are lacking consistency, regulations, and policies.

Decker, Galvan, and Sridarmont (2005), a data based manuscript indexed in MEDLINE, carried out a study integrating mass casualty response into an undergraduate curriculum in rural West Texas. The exercise involved a collision between a fertilizer truck and a church bus resulting in 68 casualties. The nursing students involved were 115 divided into groups of five with assignments given prior to the drill. Only one medical student was able to participate. The original intent was for all healthcare disciplines to be involved. This was a weakness identified in the research, along with the small sample size. The results were that areas of improvement are greatly needed in the area of disaster training especially among nursing students.

According to Conway-Welch (2002) in a theory based manuscript, indexed in CINAHL, it is suggested that there is a urgent need to ensure that nurses receive adequate training to respond effectively in mass casualty incidents. This article gave theory based application but no practice based application. Welch explored the different

agencies involved in forming the International Nursing Coalition for Mass Casualty Education (INCMCE) in 2002. The goals and action plans of INCMCE were four fold; Increased informed awareness of all nurses regarding mass casualty incidents, increased effectiveness of all nurses responding to a mass casualty incident, influencing research efforts designed to improve nursing care and response in mass casualty incidents and to monitor legislation and regulatory policies as they affect mass casualty education. The INCMCE was very fascinated with the concepts of John Hopkins University Evidenced Based Practice Center of Disaster Preparedness: asking the question of effective methods for initial education of clinicians in communicating, detecting, updating and reporting events of mass casualty. Welch further discussed core values, core competencies, role development, and professional values as it related to disaster nursing. Advanced Practice Nurses were not mentioned in this article.

Fahlgren and Drenkard (2002) in a theory based manuscript, indexed in CINAHL, discussed the role of the nurse executive in disaster preparedness. Several examples of excellent decision making by the nurse executives involved in the September 11 incident. The authors discussed valuable lessons learned during the debriefing phase. These included but were not limited to physical protection, internal and external communication planning, supply management, biological and chemical threat preparation. They further discussed the role of the nurse executive as no longer being reactive as in the past but proactive in the 21st century. They concluded that the nurse leaders have the ability to direct multiple tasks and provide strong guidance and this is what is needed during a disaster. The authors discussed nurse executives, staff nurses, and the healthcare

organizations state of preparedness and their service to the community by being in a state of readiness. The role of the Advanced Practice Nurse was never discussed.

In a theory based article by Stanley (2005) indexed in CINAHL, the role of all nursing in a disaster and the development of disaster competency was discussed. The authors explored the September 11th attacks, the Oklahoma City bombings, and Hurricane Andrew in regards to nursing care during mass casualty incidents. They gave a detailed view of all the qualities that a nurse could bring to the table during a disaster. They point out that nurses are critical thinkers and therefore can perform as deemed necessary in an emergency situation. The authors also made reference to the importance of the curriculum of all nurses from entry level to advanced practice. Education is believed by the authors to be the cornerstone of successful preparedness and response in a disaster. The education should be governed by the INCMCE, nursing faculty, accrediting and regulatory agencies. They further conclude that with the high level of skills that is possessed by the APN they are a major resource in emergency preparedness and that their education should reflect this fact.

According to Aberle (2003) a data based manuscript, indexed in MEDLINE, APNs must have the correct education and preparedness to perform optimally in the midst of a disaster. The author focused on the role of the APN in the military and the implemented course designed from this research. The investigator suggested that the nurse practitioner is trained to handle common problems in the primary care setting and that the education received does not prepare the APN to function in an emergency of great scale. A course was developed involving a pilot study in the spring of 2000 incorporated in a graduate

curriculum at the Uniformed Services University of Health Sciences in Bethesda, Maryland. The course consisted of a two day seminar packed with information needed by the APNs to successfully operate in a disaster mission. The participants filled out surveys and evaluation forms; this data was used to design the course. A weakness identified in this study was that there were 88 participants, causing the study to be biased or data unreliable. The Boone Evaluation method and the Likert scale were used in this project. Future recommendations were made to make this course available to all FNPs (Family Nurse Practitioners) through continuing education. Aberle stated that the data was limited on the role of the FNP during deployment in a disaster mission but the findings indicated a great need for further research.

According to Cole (2005), a theory based manuscript indexed in MEDLINE, explored the role of the nurse practitioner and APNs in the disaster setting. He referenced studies of NPs who practice in the emergency care setting and their years of experience as a registered nurse. He found that most all NPs have an substantial amount of practice years before becoming an NP. Therefore they bring a wealth of experience and knowledge to the table in a disaster.

Summary

In reviewing the literature, it was determined that a consensus among the researchers exist regarding the urgency and importance of disaster preparedness and education. A number of the articles reviewed revealed opportunities for further research and practice recommendations, and also found that other opportunities exist for further systematic examination of the role of the APN in disaster preparedness. The nurse practitioner since

the inception of the role has played a major role in educating the community.

However, the number of data based and theory based manuscripts related to the role of the nurse practitioner in disaster preparedness and education is extremely limited. There is a need for more current data and theory based research and practice recommendations related to the role of the nurse practitioner in disaster education and preparedness.

CHAPTER III

Design and Methodology

This chapter will present the specific parameters used for this research investigation. The approach that was used was that of an evidenced-based systematic review. According to Straus, Richardson, Glasziou and Haynes (2005) evidenced-based practice attempts to integrate best research evidence with clinical expertise and patient values. the literature selection procedure and literature analysis procedure is detailed in this chapter.

Approach

An integrated literature review, which is a review of research that amasses comprehensive information on a topic, weighs pieces of evidence, and integrates information to draw conclusions about the state of knowledge, will be used for this study. This investigation is an evidenced-based systematic review. While an integrative literature review summarizes research on a topic of interest, by placing the research problem in context and identifying gaps and weaknesses in prior studies to justify the new investigation (Polit & Beck, 2004), evidence-based practice seeks to integrate best research evidence with clinical expertise and patient values (Straus, Richardson, Glasziou, and Haynes, 2005). A summary of the current literature regarding the role of the nurse practitioner in disaster preparedness and education is provided.

Literature Selection Procedure

A systematic search of CINAHL, MEDLINE, and Cochrane Library was conducted for the relevant literature concerning the role of the nurse practitioner in disaster

preparedness and education. The reference list accompanying each article was manually reviewed for further articles pertaining to the subject. Articles were selected based on inclusion of at least one of the relevant concepts, whether as the focus of the article or as part of the broader topic. Other informative articles were also included to further explore the knowledgebase.

The systematic review of the literature began with CINAHL to find relevant nursing healthcare literature on the role of the nurse practitioner in disaster preparedness and education. Next, MEDLINE and then Cochrane Library were evaluated for further relevant literature. Journal articles were obtained through Mississippi University for Women library, via Internet databases and interlibrary loan. The review incorporated data beyond nursing and healthcare literature to expand the knowledgebase for a thorough review, thus providing a multidisciplinary approach.

References utilized were relevant and applicable to this investigation. The references were obtained from reputable and respected scholarly journals in the healthcare fields. The evidence-based practice procedure (Sackett, et al., 2005) for the systematic review comprises the following steps:

1. convert the need for information (about prevention, diagnosis, prognosis, therapy, causation, etc.) into research questions.
2. track down the best evidence with which to answer the questions using a variety of database strategies.
3. critically appraise the evidence for its validity (closeness to the truth), impact (size of the effect), and applicability (usefulness in our clinical practice addressing both

sensitivity and specificity).

4. integrate the critical appraisal with clinical expertise and the patient's unique biology, values and circumstances (p. 3-4).

Literature Analysis Procedure

For the purpose of this study, literature was sorted and organized by source and date, variables of interest, literature type and research tools, research design and sample size, theoretical foundation, references, and key findings. This organization was done manually. Data is analyzed in terms of relevancy of findings and then summarized using a chart format to assist in application of findings to the clinical problem. The findings document the current state of knowledge available that is discussed in Chapter Four according to the research questions regarding the role of the nurse practitioner in disaster preparedness.

Summary

The process of literature selection and literature analysis provided structure to and elicited meaning from the research data obtained in the review of literature. This exploration will allow for more areas to be recognized that are related to and significant to the role of the nurse practitioner in disaster preparedness, and that have implications for education, research, and practice.

CHAPTER IV

Knowledgebase findings and Practice-based Application

The aim of this chapter is to present the findings of the knowledgebase that was derived from this evidenced-based systematic literature review. Tables showing pertinent findings from the knowledgebase developed are provided with practice-based applications from the current clinical practice guidelines.

Knowledgebase Findings

In order to obtain the knowledgebase findings, a systematic literature search of CINAHL, MEDLINE, and Cochrane Library was conducted by this author. The literature reviewed totaled eight citations, which represented 122 references. Two research questions were posed in Chapter One and the pertinent findings will be discussed according to each of the research questions.

Research Question One

Research question one asks: What is the level of Advanced Practice nursing knowledge regarding disaster preparedness? Based on the nine articles reviewed and found to have relevant to the above question the level of Advanced Practice nursing knowledge regarding disaster preparedness is scarce. This indicates the need for further research of disaster preparedness. Nursing curriculum of the Advanced Practice Nurse should be revised to incorporate disaster preparedness.

Table 2

Research Question One: Characteristics of Citations Reviewed

| Citation | Type | Database |
|---------------------------|--------------|----------|
| Aberle, 2003 | Data-based | MEDLINE |
| Cole, 2005 | Theory-based | MEDLINE |
| Conway-Welch, 2002 | Theory-based | CINAHL |
| Decker et al, 2005 | Data-based | MEDLINE |
| Fahlgren & Drenkard, 2002 | Theory-based | CINAHL |
| Mann et al., 2004 | Data-based | CINAHL |
| Moore et al., 2004 | Data-based | CINAHL |
| Shadel et al., 2004 | Data-based | CINAHL |
| Stanley, 2005 | Theory-based | CINAHL |

Note. Total number of citations reviewed = 9.

Research Question Two

Research question two asks: According to the literature, what is the role of the nurse practitioner in disaster preparedness? Based on the nine articles reviewed and found relevant to the above question, the nurse practitioner has a significant role to play in disaster preparedness. The role is not well developed in the civilian realm but more so in the military setting but is still evolving. The nurse practitioner has a strong background and education in triaging, diagnosing, and treating. These factors alone make the nurse practitioner and APNs almost invaluable to a mass casualty incident.

Practice-Based Application

In order to obtain practice-based findings, a search for clinical practice guidelines was conducted by this author. Since clinical practice guidelines regarding the role of the

nurse practitioner in disaster preparedness does not exist, attention was given to the competencies and best practice approaches of the nurse practitioner in disaster preparedness. Web sites such as the Center for Disease Control and the American Red Cross were examined for their holdings regarding the role of the nurse practitioner in disaster preparedness. Findings from this review are addressed in this section in terms of each question generated for the scope of this study.

Research Question One

Research question one asked: According to the literature what is the level of Advance Practice Nursing knowledge regarding disaster preparedness? Based on the search of the World Wide Web (WWW) no best practice approaches were found pertaining to the level of Advance Practice Nursing knowledge regarding disaster preparedness. There were however, recommendations made by the National Disaster Life Support site. This site basically has set up a course that is standardized in the United States similar to Advance Cardiac Life Support (ACLS). There are two levels that an APN can become certified: Basic Disaster Life Support (BDLS) and Advanced Disaster Life Support (ADLS). These are certifications are not mandatory throughout the field of nursing but gives a framework and lays groundwork just as ACLS has become to evolve as a gold standard in the intensive care and emergency room setting.

Research Question Two

Research question two asked: According to the literature, what is the role of the nurse practitioner in disaster preparedness? Based on a search of the World Wide Web (WWW) no best practice guidelines or approaches were found pertaining to the role

nurse practitioner in disaster preparedness.

Summary

This chapter presents the findings of the knowledgebase that was derived from this evidence-based systematic literature review. Pertinent findings were discussed according to each of the research questions posed in Chapter One. A search of the World Wide Web was performed to find the best practice guidelines and approaches pertaining to the two questions posed in Chapter One. No best practice guidelines were actually discussed only suggested.

CHAPTER V

This literature review was undertaken with the focus on exploring the available literature regarding the role of the nurse practitioner in disaster preparedness. A review of the literature revealed the need to further the level of healthcare knowledge regarding the role of the nurse practitioner in disaster preparedness. According to the National Disaster Life Support Foundation (2005), “With the prospect of terrorism looming, the demand for nationally recognized courses in all hazards training has increased”. This chapter provides a summary of the literature review, including interpretation of the findings and the conclusions drawn from the findings, as well as limitations of the study and recommendations for further research.

Summary of the Investigation

The purpose of this investigation was to explore the literature regarding the role of the nurse practitioner in disaster preparedness and education. A review of the literature revealed the need to further the level of knowledge regarding the role of the nurse practitioner in disaster preparedness. Limited number of studies has been done on the role of the nurse practitioner in disaster preparedness. APNs have performed in disasters and mass casualty incidents but the documentation of their role does not exist. According to Stephen Smith (2006) of the National Disaster Medical System, the nurse practitioner plays a significant role in disaster planning and education. They are often used in disaster setting to triage, diagnose, treat, and organize”. This chapter provides a summary of the literature review, including interpretation of the findings and the conclusions drawn from the findings, as well as limitations of the study and

recommendations for further research.

Interpretation of the Findings with Conclusions

According to the literature analysis, the findings from this investigation demonstrate a gap in the literature regarding the role of the nurse practitioner in disaster preparedness. This paper attempted to consolidate the available material on the role of the nurse practitioner in disaster preparedness. An examination of the literature revealed that this area requires further investigation. Conclusions that can be drawn from the findings are that there is a need for the establishment of the role of the nurse practitioner in disaster preparedness, planning and training further, the curriculum of the APNs needs to be revised to incorporate the above.

Research Question One

The first research question asked, “What is the level of Advance Practice Nursing knowledge regarding disaster preparedness?” The results of the research indicated the level of nursing knowledge is scant. No clinical practice guidelines were found to be relevant to the nurse practitioner but suggestions and educational frameworks have been implemented all over the world to educate APNs and nurses alike. Foundations such as the National Disaster Life Support Foundation and the National Disaster Medical Systems are in the process of designing and updating the knowledgebase specific to primary care providers, such as nurse practitioners, in disaster preparedness.

Research Question Two

The second research question asked, “According to the literature, what is the role of the nurse practitioner in disaster preparedness and education?” The results indicated that

the nurse practitioner has played a vital role in disasters in the past but the role is not well defined neither has it been documented. There were however articles dealing more so with the role of the nurse in a disaster and preparedness. Disaster preparedness is a relevant concept related to the nurse practitioner due to the fact that nurse practitioner promotes education in everyday practice no matter what setting. The disaster preparedness teaching and training would only be facilitating the role of informing the public and other healthcare workers.

Limitations

There were limitations identified in this study. There was a lack of published literature available to use as a resource. Therefore, information obtained cannot be generalized beyond the scope of research reviewed. The instruments used to measure nurse practitioner in disaster preparedness were not original for this study. Most of the research was limited to a specific population and location; therefore findings may not prove reliable when tested in other locations or with other populations.

Implications and Recommendations

The investigation of the literature regarding the role of the nurse practitioner in in disaster preparedness resulted in implications and recommendations focused on nursing theory, nursing research, advanced practice nurse, nurse practitioner education, and health policy. Each of these sections will be considered in this section.

Nursing Theory

The work of Patricia Benner and Abraham Maslow were utilized to form the foundation of this research project. The nursing philosophy of Benner's "From

Novice to Expert” (2001) supplemented by Maslow’s Heirarchy of Needs were used to explore the literature regarding the role of the nurse practitioner in disaster preparedness. Although Benner theory deals with the nurse performance in an emergency or critical situation, there is lack of research dealing with the nurse practitioner’s role in disaster preparedness. The theories that are available will guide further research in this area. More theory and research development are needed to validate and guide evidenced based practice.

Nursing Research

The level of nursing knowledge is limited regarding the role of the nurse practitioner in disaster preparedness. Further research is needed on developing the role of the nurse practitioner within the realm of a disaster setting. Future research into long term benefits of disaster preparedness is needed to guide the practice of the nurse practitioner in effective approaches to disaster planning and education.

Advanced Nursing Practice

Nurse Practitioners are key professionals in the delivery of education and planning to the community. The NPs are challenged daily with the responsibility of coordinating quality care for the patient and the community. The NP should be involved in the training of other healthcare professionals and the general public to ensure that in cases of mass casualty, the community will be afforded the best care possible before, during and after a disaster. With proper training the NP can help decrease the rate of mortality and morbidity experienced in large scale emergencies.

Nurse Practitioner Education

Education of the APN and NP are ongoing processes. The nurse practitioner must stay informed and up to date in order to provide quality care and education to the community. The NP experiences many challenges daily with small scale chaotic situations, but in order to function effectively in a disaster situation the NP must take the initiative to help organize and standardize the role of the NP in disaster education and readiness.

Health Policy

The nurse practitioner should always be active in policy and politics. This is the driving force of the Advanced Practice nursing regulations. The nurse practitioner should identify barriers in healthcare, such as the need for disaster preparedness on all levels in the community, and help create a solution to the problem.

Summary

This chapter presented the evidence-based conclusions, implications, and recommendations that were derived from this evidence-based systematic review. Implications and recommendations for nursing theory, nursing research, advanced nursing practice, nurse practitioner education, and health policy were provided as they emerged from the concepts explored, as were limitations of the review and interpretation of the findings.

The purpose of this Evidence Based Project was to develop a nurse practitioner knowledgebase regarding the role of the nurse practitioner in disaster preparedness. The research asked: (a) according to the literature, what is the level of Advanced Nursing

knowledge regarding disaster preparedness?

(b) according to the literature, what is the role of the nurse practitioner in disaster preparedness?

A Boolean computer search of nursing and medical literature for theory-based and data-based, randomized control trials for citations utilizing CINAHL, MEDLINE, and Cochrane Library was conducted for this systematic review. The need for further research regarding the role of the nurse practitioner in disaster preparedness is vital and needs clarifying along with its significant benefit to the community as a whole.

According to Walker, Bibb, & Elberson (2005) , “Skill sustainment training and readiness competency research are crucial to self – preservation of civilians and military providers and is necessary for delivering quality care” (p. 555).

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