

BRIEF REPORT

Resilience of Nurses in the Face of Disaster

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ABSTRACT

Objective: On April 27, 2011, the state of Alabama encountered a horrific day of tornados that left a trail of damage throughout the state. The city of Tuscaloosa was devastated by an EF-4 that resulted in many victims and casualties. Druid City Hospital in Tuscaloosa had a massive inflow of victims with both mild and major injuries. When disasters such as this occur, nurses must respond with efficiency and effectiveness to help as many victims as possible. However, little is known about the psychological effects of disasters on nurses and how these impact nurses both personally and professionally. Because resilience can directly impact how a nurse responds to a situation, this article aimed to examine the resilience levels of nurses working during the disaster.

Methods: This study was part of a larger study examining the needs of nurses both before and after disasters. Ten nurses were interviewed and completed a 10-item survey on resilience, the Connor-Davidson Resilience Scale (CD-RISC). The full range of scores on this scale is from 0 to 40, with higher scores reflecting greater resilience.

Results: In this survey of 10 nurses, the scores ranged from 33 to 40, with a mean score of 36.7.

Conclusions: The nurses who were interviewed and completed the survey possessed a high level of resilience. More research should be done on the causes of increased resilience in nurses after disasters. (*Disaster Med Public Health Preparedness*. 2015;9:601-604)

Key Words: emergency nursing, disasters, disaster medicine, disaster planning, emergency responders

According to the World Health Organization, a disaster is “a serious disruption of the functioning of a community or a society causing widespread human, material, economic, or environmental losses which exceed the ability of the affected community or society to cope using its own resources.”¹ Nurses play a crucial role in disaster response, often sacrificing their own safety and well-being for that of their patients and community.

Emergency room nurses and other types of first responders may be subjected to intense emotional and cognitive stimuli, such as mutilated bodies, serious injuries, deeply distressed patients and families, dying children, and serious risks to their own safety. These individuals are often faced with the responsibility of making pressured decisions about the lives of the people they are trying to save.² Because of the potentially harmful psychological and physiological effects of working during disasters, current literature has begun to examine the concept of resilience in nurses and other first responders. A study by Pietrantonio and Prati³ concluded that there is a significant level of resilience among first responders after critical incidents, such as disasters.

Resilience for the health care professional is defined as the ability to handle adversity and maintain positivity, both personally and professionally, after experiencing work-related stress events.⁴ It has been recognized as one of the most important characteristics to have in the face of trauma because it helps to prevent the development of post-traumatic stress disorder (PTSD).⁵ Clearly, resilience is an important quality for nurses to possess, especially during disasters and other traumatic events.

According to the Centre for Research on the Epidemiology of Disasters (CRED) Annual Disaster Statistical Review, in 2013 a total of 330 natural disasters killed 21,610 people and made 96.5 million people around the world victims.⁶ CRED defined a disaster as “a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance.” It further defines it as “an unforeseen and often sudden event that causes great damage, destruction, & human suffering.”

A literature review by Hammand et al⁷ examined and reviewed articles dealing with disasters and nurses. Five main themes emerged in the articles

reviewed: (1) the role of the nurse during the disaster, (2) the feelings of the nurses working, (3) perceptions of preparedness, (4) barriers to working during a disaster, and (5) changes that happen during a disaster. Hammand et al concluded that there is a knowledge gap in the preparedness needs of nurses and how nurses are impacted by their changing roles during disasters.⁷

In 2008, the American Nurses Association (ANA) released a policy paper on standards of care for nurses during extreme conditions, such as disasters. The paper was formulated after a national meeting on disaster care and after reviews of standards of care for nurses, looking at state and national guidelines. The ANA adopted 11 core competencies originally developed by the Columbia University School of Nursing Center for Health Policy in 2003. These included topics such as communication; role responsibilities; recognition of signs and symptoms of biological, chemical, or radiologic agents; prevention of transmission; patient care; use of information sources; management of stress and anxiety; and post-event debriefing. Then, in 2009, the World Health Organization expanded the core competencies with the International Council of Nurses Framework. The competencies are organized into 4 areas: mitigation and prevention, preparedness, response, and recovery. The purpose was to describe the guidelines for a generalist nurse working in a disaster situation.

Nurses working in disaster care may experience significant stress. Some may even develop PTSD, major depression, or severe psychological illness after the event. Nurses and other types of caregivers often put their needs behind those of their patients, causing stress to build up over time. As caregivers, nurses have to learn to cope with their own stress and anxiety.

Knowing how nurses cope with the trauma of working a disaster is crucial to understanding resilience and in decreasing the risk of psychosocial distress, such as PTSD and depression.⁸ Secondary traumatic stress can also develop, leading to issues with mental health. A growing body of knowledge suggests that positive coping mechanisms are directly impacted by high levels of resilience in the nurse or caregiver. Therefore, resilience can directly impact how a nurse responds to a situation.⁹ Resilience involves the ability to rebound and carry on, determination, and a prosocial attitude. In order to have these abilities, many people also need to have supportive networks, positive self-esteem, self-reliance skills, and the ability to problem solve and seek help when needed.

The study by Pietrantonio and Prati³ concluded that the presence of resilience in emergency workers, including nurses, directly compensates for the negative risk factors involved in emergency care. Furthermore, it was concluded that the level of resilience in a first responder is enhanced by the amount of training, preparedness, personality factors, and managerial practices.² In order to maintain standards set forth by the ANA, it is important that nurses maintain adequate levels of

resilience. In this article, I describe resilience in a group of 10 registered nurses who worked during the April 27, 2011, tornado that ravaged Tuscaloosa, Alabama.

METHODS

Registered nurses who worked at Druid City Hospital in Tuscaloosa, Alabama, during the April 27, 2011, tornado were afforded the opportunity to participate in this study. This disaster was selected because the hospital reported an influx of around 900 victims in the first 12 hours following the tornado with injuries ranging from life-threatening to minor. After institutional review board approval was received, flyers inviting participants were placed on bulletin boards in all hospital break rooms. The flyers remained in the hospital for about 10 months. Ten nurses volunteered to be in the study. All nurses were interviewed and were asked to complete a survey on resilience. The survey tool was a 10-item measure of resilience, the Connor-Davidson Resilience Scale (CD-RISC). The scale was developed to measure one's ability to cope with adversity or to measure the hardiness of a person in the aftermath of stress or trauma.¹⁰ Analysis of the tool by Campbell-Sills and Stein supported the reliability and construct validity of the 10-item scale.¹⁰ The items in the survey are listed in Table 1.

The sample involved semi-structured in-depth interviews, followed by completion of the resilience survey, with 10 English-speaking nurses from Druid City Hospital who were on duty during the April 2011 tornado. The nurses were from the following areas: emergency room, intensive care units, and medical/surgical floors.

The average age of the nurses was 38.9 years (range, 30-59 years). Seven nurses were married, 2 were divorced, and 1 had never been married. Nine nurses were female, and 1 was male. All nurses identified themselves as white.

RESULTS

The survey instrument involved 10 items, using a Likert-scale format ranging from 0 (not true at all) to 4 (true nearly all the time). The results of the survey are listed in Table 2. For the first survey question, 8 of 10 nurses stated that they were able to adapt to change nearly all the time, and 2 of 10 stated that they could adapt to change often. Secondly, 5 nurses stated that they could nearly always deal with whatever came their way, whereas the other 5 stated that they could often deal with whatever came their way. The third survey question stated, "I try to see the humorous side of things when I am faced with problems." Five respondents said that this was true nearly all the time and the other 5 said that this was true often. Item number four stated, "having to cope with stress can make me stronger." Seven nurses stated that this was true nearly all the time and 3 stated that this was true often.

TABLE 1

Resilience Questionnaire^a

Item Number	Question
1	I am able to adapt when changes occur.
2	I can deal with whatever comes my way.
3	I try to see the humorous side of things when I am faced with problems.
4	Having to cope with stress can make me stronger.
5	I tend to bounce back after illness, injury, or other hardships.
6	I believe I can achieve my goals, even if there are obstacles.
7	Under pressure, I stay focused and think clearly.
8	I am not easily discouraged by failure.
9	I think of myself as a strong person when dealing with life's challenges and difficulties.
10	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.

^aSource: the Connor-Davidson Resilience Scale.¹⁰

TABLE 2

Frequency Table of Survey Responses of 10 Nurses to the Resilience Scale

Item Number	Not True At All	Rarely True	Sometimes True	Often True	True Nearly All The Time
1	0	0	0	2	8
2	0	0	0	5	5
3	0	0	0	5	5
4	0	0	0	3	7
5	0	0	0	1	9
6	0	0	0	1	9
7	0	0	0	3	7
8	0	0	1	5	4
9	0	0	0	5	5
10	0	0	0	4	6

Nine nurses stated that they nearly all the time tended to bounce back after illness, injury, or other hardships, and 1 said that this was often true. Nine nurses also agreed that they nearly all the time achieved their goals even when faced with obstacles. One nurse stated that this was often true. The seventh item, "I stay focused and think clearly under pressure," was true nearly all the time for 7 nurses and true often for the other 3 nurses. Item number eight, "I am not easily discouraged by failure," was true nearly all the time for 4 nurses, often true for 5 nurses, and sometimes true for 1 nurse. Five nurses stated that they almost always thought of themselves as a strong person when dealing with life's challenges and difficulties, and the other 5 stated that they often did so. Lastly, 6 nurses stated that they could handle unpleasant or painful feelings like sadness, fear, and anger nearly all the time, and 4 stated that this was often true.

According to the CD-RISC manual, random means on the survey in the general population range from 29.1 to 33.5. The scores are derived from adding up the total of all items in the 10-item scale. The full range of scores is from 0 to 40, with

higher scores reflecting greater resilience. In this survey of 10 nurses, the scores ranged from 33 to 40, with a mean score of 36.7.

DISCUSSION

Pietrantonio and Prati concluded that there is a significant level of resilience among first responders, including nurses, after critical incidents such as disasters.³ In the present study, which was completed in the fall of 2014, I found that the nurses who were interviewed and completed the survey possessed a high level of resilience compared with the general population, which is consistent with previous research. The findings are significant because, as stated previously, resilience is an important trait for nurses who are actively involved in disaster care.

Limitations

Limitations of this study should be acknowledged. The sample size was small ($n = 10$). This was because these results are part of a qualitative study, which is still in the transcription process. The study subjects were all from the same hospital and all volunteered to be interviewed. Flyers were placed in all hospital break rooms for about 10 months, but only 10 nurses contacted the researcher. The sample was one of convenience. All of the nurses in the study were offered post-disaster counseling, which could have positively impacted the results.

More research should be done on the causes of increased resilience in nurses after disasters. In other words, what characteristics are common to those who show high levels of resilience? This information can be used to help hospitals and organizations increase resilience in nurses.

CONCLUSIONS

This topic is significant because nurses make up such a large population of health care first responders. The well-being of nurses is an area of concern because they need to be able to

return to the work field as healthy, competent providers of patient care. Disaster response is a stressful and traumatic area to work in, and health care systems, hospitals, and nursing organizations must be able to support nurses in the recovery process after a disaster. Nurses have a responsibility to work in the aftermath of a disaster, but the stress associated with the event may lead to feelings of uncertainty, hopelessness, fear, abandonment, grief, and anger.⁸ This particular sample had high resilience levels. It would be interesting to see how these numbers compare to other hospitals across the nation. Hospitals scoring low would need to look at their process of addressing post-disaster needs with nursing staff. This particular hospital provided counseling after the fact to any health care workers who were involved in the disaster. Post-disaster counseling can positively increase resilience, which may have been the case in this sample.

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Published online: June 5, 2015.

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