FACTORS THAT AFFECT NURSING STUDENTS' WILLINGNESS TO RESPOND TO DISASTERS OR PUBLIC HEALTH EMERGENCIES

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Submitted to the Faculty of the
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in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
August, 2017

FACTORS THAT AFFECT NURSING STUDENTS' WILLINGNESS TO RESPOND TO DISASTERS OR PUBLIC HEALTH EMERGENCIES

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Date of Degree: AUGUST 2017

Title of Study: FACTORS THAT AFFECT NURSING STUDENTS' WILLINGNESS TO RESPOND TO DISASTERS OR PUBLIC HEALTH EMERGENCIES

Conditions throughout the United States are such that the frequency and intensity of disasters have increased, affecting more people, thereby increasing the demand on healthcare facilities and disaster response organizations. The demands to protect and care for existing patients while also providing medical care to victims of disasters can exacerbate the existing shortage of nurses. Alternative human resource strategies should consider the potential use of nursing students to increase available personnel resources. Unfortunately, little is known about the willingness of nursing students to help during a disaster. The purpose of this study was to examine willingness to respond among student nurses and identify factors that affected willingness. A quantitative research design using an online survey collected data from baccalaureate-level registered nursing students at two universities (n=110) during the Spring 2016 semester. The findings depicted a high level of overall willingness to respond to a disaster, with student nurses more willing to respond to natural disasters than human-caused disasters. Factors such as fear for personal safety, type of disaster, and lack of training were negatively correlated with willingness to respond; whereas perceived moral obligation and the belief that nursing students should be encourage to volunteer were positively correlated with willingness to respond.

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CHAPTER I

INTRODUCTION

This study examined the willingness of registered nursing (RN) students at two universities, to respond and support healthcare organizations during a disaster or public health emergency (PHE). Additionally, the study sought to identify factors that affected their willingness to respond. Specifically, the study used existing literature to examine barriers to willingness. In the present study, the term "disaster" represents natural and human-caused disasters and PHEs.

Disasters can result in an influx of patients (known as medical surge), which creates challenges in providing medical care. Medical surge, which refers to an increase in the capacity and capability to provide adequate medical care during a disaster when the number or types of patients exceed the capabilities of the community's medical infrastructure, is a primary means for managing patient influx (U.S. Department of Health and Human Services, 2007). Previous studies indicated patient surge may create staffing issues for healthcare personnel—nurses in particular—who need to continue to care for patients already in hospitals or similar facilities (Cusack, Arbon, & Ranse, 2010).

Disasters can also result in a surge of people at hospitals who do not require hospital level medical care. Following Hurricane Sandy in 2012, community residents with chronic diseases, such as hypertension, reported to local hospital when they ran out of medication and were unable to go to a pharmacy or doctor's office, which were closed (U.S. Department of Health and Human Services Office of Inspector General, 2014). Individuals using oxygen in their home also went to hospitals because they did not have electricity at home to operate the equipment. The closure of mental health and rehabilitation clinics caused an influx of patients with mental health issues or drug abuse problems. Additionally, healthy community members went to hospitals seeking shelter (Adalja et al., 2014; U.S. Department of Health and Human Services Office of Inspector General, 2014). The arrival of these individuals consumed personnel resources needed to provide clinical care to the ill and injured.

According to Roberts (2009), "true surge capacity can only be reached by having additional local personnel to augment the response" (p. 11). Response to a surge cannot be successful without adequate personnel to provide patient care and support services. As Roberts stated, "The additional response can and often does come from local citizens with special talents and skills who volunteer their services in a disaster" (p. 11). In fact, individuals often feel a strong need to help those affected by disasters (Lowe & Fothergill, 2003). If willing, RN students could bolster nursing personnel resources, in the event of a disaster by performing activities otherwise performed by professional nurses.

Background

Industrialization and urbanization, which create conditions for major disasters, are leading to new and unique emergencies that will increasingly affect American society (Quarantelli, 2003). Every disaster has the potential to require some type of healthcare involvement due to injuries and illnesses. Therefore, communities and healthcare organizations must prepare adequately to serve those who are affected. To illustrate, Hurricane Katrina affected

a multi-state area, compelling over one million people to leave their homes and workplaces (Waugh, 2006). Evacuees included significant numbers of people with chronic medical conditions such as end-stage renal disease and hypertension, while others had recent surgery or required such interventions as intubation or tracheostomies (Klein & Nagel, 2007). In addition, some of the affected people had infected wounds, while others had lost their medications in the disaster (Mistric & Sparking, 2010).

Disasters may result in either mass casualties or mass effects. The United States Department of Health and Human Services (DHHS) (U.S. Department of Health and Human Services , n.d.) defined a mass casualty incident (MCI) as "an incident that generates a sufficiently large number of casualties whereby the available healthcare resources, or their management systems, are severely challenged or unable to meet the healthcare needs of the affected population" ("1.1.1. Range of Hazard", para. 4). In contract, mass effect incident (MEI) was defined as "an incident that primarily affects the ability of an organization to continue its normal operations" and "can disrupt the delivery of routine healthcare services and hinder the ability to provide needed surge capacity" ("1.1.1. Range of Hazard", para. 5). It seems reasonable to expect that the availability of nurses would play a significant role in the ability of an organization to manage these types of incidents.

Federal regulations from the Centers for Medicare and Medicaid Services (CMS) require disaster plans for hospitals and other medical facilities that address all types of disasters including sudden onset events such as earthquakes and terrorist attacks and slow onset events, such as pandemics. In addition, medical facilities must also contend with mass casualties from emergencies such as transportation accidents. All of these incidents have the potential to create situations in which the needs are greater than available resources. As of November 2016, disaster management programs, including disaster plans, became a condition of participation for seventeen types of healthcare facilities (Centers for Medicare and Medicaid Services, 2017).

Among other things, disaster plans must provide guidance for the continuation of care for existing patients, provision of care to disaster victims, and evacuation and reception of patients.

Although registered nurses are important healthcare providers given their abilities to offer both direct care and support services, there is a nursing shortage within the United States (American Association of Colleges of Nursing, 2014). Disasters make this shortage more critical because they stretch the available nursing staff just when they are the most desperately needed. Furthermore, research indicates that nurses and other healthcare workers already in the field may not always respond to disasters (Chaffee, 2009). A study of 29 registered nurses found as many as 82% indicated they would not report to work given the study's pandemic scenario (Syrett, Benitez, Livingston & Davis, 2007). Another study suggested 42% of healthcare workers would not report during a chemical or radiological terrorist incident (Cone & Cummings, 2006). Based on previous studies, alternative personnel sources must be identified. Once such alternative may be registered nursing students; however, there is little information on this population's willingness to help during a disaster.

Research suggests that student nurses may have a specific set of knowledge, skills, and abilities that make them a uniquely valuable resource during a disaster (Adams & Canclini, 2008; Cusack, et al., 2008). Although nursing students may lack specific training and certification needed to provide clinical care, they could perform other activities that would reduce the burden on professional, licensed RNs to provide patient care. A study among members of the National Student Nurses Association (NSNA) found that during past disasters some respondents provided clinical support (e.g., wound care, taking vital signs, and triage), as well as non-clinical support (e.g., family support) (Schmidt et al., 2011). Nursing students have a history of helping during disasters. For example, student nurses from Texas Christian University assisted with tracking and identifying individuals who evacuated from the Gulf Coast to North Central Texas during Hurricane Katrina in 2005 (Adams & Canclini, 2008). Other nursing students from Purdue University School of Nursing (SoN) in Indiana assisted Hurricane Katrina victims between 2006

and 2008 (Richards, Novak, & Davis, 2009). Students from the University of Texas at Austin School of Nursing provided such support to evacuees as reviewing medications, completing client assessments, and assisting with daily living activities during Hurricanes Gustav and Ike in 2008 (Pattillo & O'Day, 2009). A comparative study conducted by Dunlop, Logue, and Isakov (2014) found that nursing students have responded to multiple disasters including the 2009 ice storms in Kentucky and 2008 Hurricanes Gustav and Ike. Student nurses in other countries also have demonstrated a willingness to respond during disasters. For example, students from St. Luke's College of Nursing in Tokyo, Japan responded to St. Luke's International Hospital to assist during the Tokyo subway sarin attack in 1995 (Okumura et al., 1997). In addition, nursing students joined professional nurses to provide support immediately following the 1995 Great Hanshin-Awaji Earthquake in Japan (Mitani, Kuboyama, & Shirakawa, 2003).

Research has indicated that student nurses may be willing to respond to future disasters (Yonge, Rosychuk, Bailey, Lake & Marrie, 2010; Young & Persell, 2004). In fact, nursing students may feel an obligation to volunteer during a disaster (Yonge et al., 2010). Interestingly, there may even be an assumption among communities that nursing students have an obligation to respond (Yonge et al., 2010). The American Red Cross has a long history of using student nurses to provide medical support in emergency shelters (American Red Cross, 2010), making use of their learned and developing skills. Realizing their key role, the NSNA developed guidelines for student nurses' participation in disaster response activities. In addition, the NSNA established the Disaster Project with a goal to increase the number of nursing students qualified to participate in disaster relief activities (2011). The NSNA recommended that state and/or school chapters establish disaster relief committees, which would collaborate with healthcare facilities and community organizations such as the American Red Cross (ARC) and Medical Reserve Corps (MRC), to develop plans that incorporate nursing students into response activities. Both the ARC and MRC recognize nursing students as official volunteers (American Red Cross, 2010; Medical Reserve Corps, 2014).

Researchers have recommended that schools of nursing develop disaster-related agreements with local communities and many schools have done this successfully (Adams & Canclini, 2008; Cusack et al., 2010). An example of partnership is the collaboration between Purdue University School of Nursing (SoN) and organizations in Mississippi immediately following Hurricane Katrina in 2005 (Richards et al., 2009). Purdue University SoN established an agreement with Alcorn State University in Mississippi to allow Alcorn State students to complete their degree program. Purdue University SoN also established a partnership with Coastal Family Health Clinics in Mississippi to help disaster victims. Between 2006 and 2008, five groups of nursing students from Purdue SoN provided clinical and non-clinical support through the Coastal Family Health Clinics (Richards et al., 2009).

In addition to partnerships created following of a disaster, nursing schools have also established partnerships to improve disaster preparedness. Long Island University SoN in New York collaborated with Woodhull Medical Center to develop disaster exercises in which nursing students worked alongside healthcare professionals (Ireland et al., 2006). Kentucky Christian University SoN initiated a partnership with the local Office of Emergency Management to develop a campus wide disaster drill in 2005 (Wise, 2007). Following the initial exercise in 2005, the SoN established other partnerships with community organizations and agencies, such as the county health department, which made the university a mass immunization site (Wise, 2007).

Immediately following a disaster, impacted communities often experience an influx of individual and organization volunteers. The convergence of volunteers can create significant issues for the people managing response operations. Researchers have found numerous occurrences of unsolicited volunteers, including healthcare workers, in past disasters such as the terrorist attacks on September 11, 2001 (Lowe & Fothergill, 2003) and Hurricane Katrina (Hodges, Pepe & Henning., 2007). However, an expanded search of extant literature found no information on spontaneous nursing student volunteers. Studies indicate that if nursing students respond to a disaster, they do so through their university or through established organizations

such as the ARC (see Adams & Canclini, 2008; Dunlop et al., 2014; Pattillo & O'Day, 2009; Richards et al., 2009; Weeks, 2007). In fact, research suggests that being a student may be a barrier to responding to a disaster. A study examining the response of Japanese nurses following the Hanshin-Awaji Earthquake in 1995 found that of the 148 student nurses who participated in the study, only 11 (.9%) responded to the disaster as part of relief teams (Mitani et al, 2003). 125 students (84%) cited "being a student at the time" as the reason for not responding. Research is necessary to examine this potential barrier since only one study specifically considered whether being a student affected participation in disaster response activities. While it is unlikely that spontaneous volunteerism is an issue among nursing students, the American Red Cross (2010) and NSNA (2011) strongly recommended that student nurses pre-register with response organizations. Both organizations discourage spontaneous, unanticipated volunteers due to the potentially disrupting effects on disaster response.

Problem Statement

Student nurses could be significant resources during a disaster; however, to date few studies have examined willingness to respond among this population. Additionally, little is known about the factors that affect their willingness to respond. Researchers contend that while nursing students may not be prepared and are not yet certified to provide medical care, they are prepared to serve in supporting roles such as feeding hospital patients, providing refreshments to staff, answering community phone lines, and providing other clerical support (Rosychuk et al., 2008; Yonge et al., 2010). Researchers have suggested that nontraditional personnel such as teenagers and homemakers may become resources during a disaster (Dynes & Quarantelli, 1986), which could also include RN students. Therefore, it seems reasonable to assume that student nurses may be needed or asked to serve as healthcare resources in future disasters, which assumes a level of willingness on their part to provide such support. Indeed, to provide such critical supplemental support, student nurses must be willing to respond during a disaster. A review of the extant literature found limited research on this subject. Therefore, particularly because of

nursing students' potential for boosting the healthcare-provider population during disasters, the emergency management and healthcare fields need research that examines nursing students' willingness to respond during disasters.

Purpose

The purpose of this study is to examine willingness among registered nursing students to respond to a disaster and to identify factors that influence such willingness to respond. The potential values of such a study include: (1) disaster and medical surge planning and management, (2) mitigating inhibiting factors that are amenable to intervention, (3) increasing the willingness of nursing students to respond during a disaster, and (4) improving nursing curricula to teach competencies for disaster response.

Significance

The importance of this research and of involving student nurses in disaster response becomes apparent when examining enrollment numbers. The number of students enrolled in Bachelor of Science in Nursing (BSN) degree programs in the United States totaled 331,703 (American Association of Colleges of Nursing, 2016). The total enrollment in BSN degree programs included 228,035 enrolled in entry-level degree programs designed for students who were not yet licensed registered nurses (RN) and 103,668 enrolled in RN to BSN degree programs which are designed for licensed RNs who returned to college to obtain a baccalaureate degree. The total number of students revealed a substantial population with the number of students expected to increase to meet the increased demand for registered nurses (Accreditation Commission for Education in Nursing, 2015). Clearly, a student population exceeding 300,000 could serve as a considerable resource to assist with medical care immediately following a disaster, such as an earthquake, or during a long-term event, such as a pandemic (Adams & Canclini, 2008; Cusack et al., 2008). However, as with any volunteer assistance, there may be a reluctance among student nurses to respond.

It seems possible to increase and improve the potential for using student nurses for both clinical and nonclinical care by better understanding the barriers that may inhibit their willingness to offer their services before, during, and directly following a disaster. For example, student nurses are learning their skills and many have not yet been certified or licensed in any manner, which may prevent some from stepping out and offering their assistance. Additionally, unlike fully employed nurses, there is no workplace requirement for most student nurses to report to work unless such requirements are part of an internship. Therefore, the willingness that student nurses express to assist during a disaster must be understood in the context of volunteerism and not as a requisite for continued employment or—if the student nurse declines to respond to a disaster—as a dereliction of duty. Indeed, volunteering during a disaster may be a positive strategy for future employment searches.

Research has identified several factors that influence the likelihood of nurses and other healthcare workers to respond to disasters. For example, Davidson et al. (2009) found that concern for family safety and family obligations to care for children, elderly family members, or pets contributed to a significant increase in healthcare-worker no-show rates at a San Diego hospital during wildfires in October 2007. For another example, Adams and Berry (2012) identified that concern for one's personal and family safety, having dependent children, and pet care responsibilities reduced willingness of healthcare workers in a Midwest healthcare network to respond to multiple types of disasters. The emergency management, academic, and healthcare fields need additional research to determine whether these and other factors affect the willingness of student nurses to respond during disasters.

Research Questions

Medical surge, coupled with the increasing number and potentially greater impact of disasters (Quarantelli, 2003), suggests a need for additional healthcare workers to respond when disaster strikes. Given that pre-licensed student nurses have provided support in past disasters and likely will serve in future disasters, it is crucial to learn whether they are willing to do so and

what factors influence the likelihood of their participation. The present study examined the willingness of student nurses in BSN degree programs at the University of Utah (U of U) College of Nursing (CoN) and Arkansas State University (ASTATE) College of Nursing and Health Professions (CoNHP) to respond to disasters and the factors that affected their willingness to respond. The study's research questions first examined the level of student nurses' willingness to respond to disasters and then sought to understand the conditions and factors associated with their level of willingness.

1. To what extent do nursing students perceive themselves as being willing to respond to disasters?
2. What factors affect the willingness of nursing student to respond to disasters?
3. To which types of disasters are nursing students most willing to respond?

Foundational Research

The following section briefly reviews existing research in order to understand the value of the present study. Chapter 2 provides a more detailed discussion. A significant component in providing healthcare during a disaster is the willingness of healthcare workers, including nurses, to report to work. For the purposes for this study, *willingness to respond* refers to "a personal decision to report to work" (Qureshi et al., 2005, p. 379) or to respond to a disaster even when one is not scheduled to work. Willingness to respond refers to an individual's intention to respond. *Willingness to respond* should not be confused with *ability* to respond which refers to "the capability of an individual to report to work" (Qureshi et al., 2005, p. 379) or respond to a disaster. One might be willing to respond but be unable to do so for various reasons. Research indicates that multiple factors affect the willingness of healthcare workers to respond to a disaster.

A review of 20 studies conducted among healthcare workers in the United States identified common factors that affect willingness to respond. The most commonly identified factor, found in 15 studies, was responsibility for dependent children (see Adams & Berry, 2012;

Balicer et al., 2010, 2011; Ogedegbe, Nyirenda, DelMoro, Yamin & Feldman, 2012). In 14 of the 20 studies, researchers identified three additional factors. The first was concern for oneself, which refers to concern or fear for personal safety and wellbeing (see Balicer et al., 2010, 2011; Cone & Cummings, 2006; Mercer, Ancock, Levis & Reyes, 2014). The second factor was concern for the safety and wellbeing of family members (see Burke, Goodhue, Chokshi & Upperman, 2010; Goodhue et al., 2012; Qureshi et al., 2005). The third factor was disaster training (see, Barnett et al., 2009; Goodhue et al., 2012; Qureshi, Merrill, Gershon & Calero-Breckheimer, 2002). In eight studies, researchers found that the type of disaster influenced willingness to respond. For example, healthcare workers at 47 hospitals in New York City were more willing to report to work during a snowstorm (80.4%) and less willing to report after a SARS outbreak (48.4%) (Qureshi et al., 2005). Researchers identified other factors that affect willingness to respond such as gender (Goodhue et al., 2012; Mercer et al., 2014), age (Goodhue et al., 2012; Ogedegbe et al., 2012), pet care responsibilities (Adams & Berry, 2012; Cone & Cummings, 2006; Davidson et al., 2009), transportation concerns (Mercer et al., 2014; Qureshi et al., 2002), household preparedness (Balicer et al., 2011; Goodhue et al., 2012), and distance between home and work location which may be either a facility or disaster site (Burke et al., 2010; Cone & Cummings, 2006).

Researchers have studied willingness to respond among healthcare workers, creating a significant body of knowledge. Unfortunately, a search found only two studies specifically examining student nurses' willingness to respond to a disaster and one examining willingness to respond among college students, including nursing students, and faculty. Researchers conducted two studies at universities in Canada (Rosychuk et al., 2008; Yonge et al., 2010) and one at a university in the United States (Young & Persell, 2004). The data revealed factors similar to those in research on employed healthcare workers including concern for self (Rosychuk et al., 2008; Yonge et al., 2010; Young & Persell, 2004), concern for family (Young & Persell, 2004), level of disaster training (Yonge et al., 2010), and type of disaster (Young & Persell, 2004). Other factors

included moral and ethical obligations (Rosychuk et al., 2008; Yonge et al., 2010) and past volunteer experience (Rosychuk et al., 2008; Yonge et al., 2010). Based on the findings from the limited research on nursing students, it seems reasonable to expect factors that affect healthcare workers also affect willingness to respond among students; however, given the extremely limited research regarding student nurses, additional study is necessary.

Location and Population for the Study

The goal of this descriptive quantitative study was to determine the extent to which nursing students in baccalaureate degree programs were willing to respond to disasters and examine factors that might affect such willingness to respond. The study measured student's willingness as their intent to respond. The study population consisted of the 940 students enrolled in baccalaureate level nursing degree programs at two universities in the United States, the University of Utah (U of U) College of Nursing (CoN) in Salt Lake City, Utah and Arkansas State University (ASTATE) College of Nursing and Health Professions (CoNHP) in Jonesboro, Arkansas during the Spring 2016 semester. Collecting data at two geographically different universities may improve external validity by increasing heterogeneity of the sample population (Frankfort-Nachmias, Nachmias & DeWaard, 2014).

University of Utah in Salt Lake City, Utah

Utah ranked third among the 50 states for population growth in 2013 and in 2014 its population continued to grow faster than most states (Utah Economic Council, 2015). While this continued population growth is good for the state, it also expands the number of people vulnerable to disasters. Potential natural, technological, and human-caused hazards within the state include earthquakes, floods, landslides, dam failures, wildfires, drought, and severe weather (Utah Division of Emergency Management, 2014). For example, according to the United States Geological Survey (USGS) (United States Geological Survey, 2014), Utah is one of 16 states at high risk for earthquakes.

While Utah faces many types of hazards, the Utah Division of Emergency Management and emergency managers in Salt Lake County rank earthquakes as the most significant hazard (Salt Lake County Emergency Management, 2015; Utah Division of Emergency Management, 2014; Wasatch Front Regional Council, 2008). The earthquake hazard in the Salt Lake region is tied to the Wasatch Fault Zone (WFZ), which is part of the Intermountain Seismic Belt. The WFZ is a series of ten segment faults rather than a single fault line. In total, the WFZ extends vertically 240 miles from southern Idaho to the middle of Utah. Geologists studying the WFZ have found that an earthquake measuring at least 6.5 magnitude has occurred approximately once every 350 years (Solomon et al., 2005). According to the USGS (n.d), approximately 75% of Utah's population lives near the WFZ, making earthquakes a significant potential hazard for citizens.

Utah's population growth, especially in the Salt Lake Valley, increases the number of potential disaster victims who might require medical care. The U of U Hospital's disaster response plan incorporates student nurses from the U of U Health Sciences as personnel resources during a disaster (P. Chaffee, personal communication, April 14, 2015); however, it is unknown whether the students would be willing to respond during a disaster since there is no known data regarding the question. In addition, the Salt Lake, Summitt, and Tooele County (SST) Healthcare Coalition is considering the potential of using nursing students to supplement healthcare workers during a disaster (T. Begay, personal communication, October 14, 2015). The National MRC is also working to incorporate nursing students into this volunteer organization (S. Sayre, personal communication, November 3, 2015). Disaster plans developed on unrealistic expectations could worsen the overall impact. Because communities and organizations have begun to look at nursing students as potential emergency-response resources, it is important to understand whether this group is willing to respond. In addition, due to the variety of hazards within Utah, it is important to understand the extent to which nursing students might be willing to respond to different types of disasters.

The U of U CoN does not offer a course in disaster preparedness and response (R. Wilson, personal communication, April 7, 2015). Nursing students have the opportunity to attend an eight-hour disaster readiness course provided by an outside organization as an elective within the Interprofessional Education Program. Nursing students may elect to take this course; however, the training is not required.

Arkansas State University in Jonesboro, Arkansas

Arkansas has a population of 2.97 million, which is similar to Utah's 2.94 million population (U.S. Census, n.d.). Also similar to Utah, numerous natural, technological, and human-caused hazards threaten residents within Arkansas, including the potential for earthquakes, winter storms, tornadoes, hazardous materials release, terrorism events, and disease outbreak (Arkansas Department of Emergency Management, 2013). Each of these hazards could result in significant injuries and deaths.

According to the 2013 Arkansas Mitigation Plan, a major concern for the state is dam and levee failure. A total of 62 federal- and 1,179 state-regulated dams are located throughout Arkansas. Of the 1,241 dams, 150 are high-hazard dams, 208 are significant-hazard, and 821 are low-hazard dams. In the state, 72 of the 75 counties (97%) have one or more dams, and of those 72 counties, 42 counties (58%) have dams rated as having high-hazard potential and 55 counties (76%) have dams rated as significant-hazard potential. Only two counties have no potential dam hazard. In addition to the 1,241 dams, there are 66 levees in the state, 34 of which have an inspection rating of unacceptable (Arkansas Department of Emergency Management, 2013). Nearly every county in the state has some level of dam or level hazard. As a result, almost the entire population is at risk from dam or levee failure.

The ASTATE College of Nursing and Health Professions (CoNHP) provides disaster curriculum content as part of its nursing degree programs. The CoNHP created the Regional Center for Disaster Preparedness Education in 2005 to provide disaster education to health professions (ASTATE Regional Center for Disaster Preparedness Education, n.d.). In addition to

the BSN degree, the ASTATE CoNHP also offers a minor in Homeland Security and Disaster Preparedness. All BSN students must complete the National Disaster Life Support Foundation's (NDLFS) Basic Disaster Life Support (BDLS) course prior to graduation (D. Persell, personal communication, December 15, 2015). Completion of the BDLS course provides participants with a national certification.

Preview of Upcoming Chapters

Chapter 2 reviews extant literature to identify and describe the most common factors that affect the willingness of healthcare workers to respond to disasters. Among these are family obligations of childcare, eldercare, or marital status; type of disaster; concern for self; concern for family; and disaster related training and education. The chapter also reviews theoretical frameworks through which a study of willingness of healthcare pre-professionals to respond to disasters may apply. Chapter 3 outlines the methodological approach used in this study, which is a quantitative examination of the potential relationship among the identified factors and willingness to respond through statistical testing. Chapter 4 provides the study's findings by discussing the results of data analysis. Chapter 5 synthesizes these findings to present conclusions and offers suggestions for future study.

CHAPTER II

LITERATURE REVIEW

During a disaster, healthcare organizations must ensure the continuity of care for existing patients as well as the provision of care to disaster victims. Disasters create demands that often challenge or exceed the medical infrastructure of an affected community (U.S. Department of Health and Human Services, 2007). In 1986, Dynes and Quarantelli authored a study examining the delivery of hospital services immediately following a disaster. The study identified issues with disaster plans, mobilization, information processing, task assignment, decision-making, and interorganizational relationships. More recently, researchers identified similar issues in the delivery of healthcare services following a disaster. Studies conducted following Hurricane Sandy in 2012 provided insight into the effects of disasters on healthcare facilities. Hurricane Sandy resulted in the evacuation of 6,300 patients from 37 healthcare facilities (Farley, 2013). Before the hurricane made landfall, some healthcare facilities decided to evacuate patients. Other facilities chose to shelter in place, relying on generator power; however, flooding caused some generators to fail, which led to post-landfall evacuations of additional hospitals and residential facilities (Gibbs & Holloway, 2013). Evacuations after the hurricane made landfall were extremely difficult due, in part, to the lack of transport services and unavailability of electronic medical records (Adalja et al., 2014).

Although student nurses could provide assistance to healthcare facilities during a disaster, literature does not adequately address the willingness of student nurses to respond to natural, technological, and human-caused disasters. The willingness of employed healthcare workers, including registered nurses, to respond to disasters has been a focus of research for many years and has led to a substantial body of literature. Studies consistently show that some healthcare workers are unwilling to respond to certain types of disasters (Chaffee, 2009; Chapman & Arbon, 2008). In addition, previous studies revealed that certain factors influence willingness to respond. By identifying these factors, it may be possible to develop strategies to address them, reduce their effects, and increase the number of people willing to help during a disaster. The remainder of this chapter reviews the existing literature on whether and why healthcare workers are willing to respond to disasters in order to establish the need and theoretical construct for the present study.

Variables

The dependent variable in this study is *willingness to respond* to a disaster. The study examined *willingness to respond* as an intention rather than an action. The independent variables are factors that may affect student nurses' willingness to respond. Due to the lack of research on nursing students, factors identified in previous research among healthcare worker were included. The primary focus of the study was the effect of barriers on willingness to respond. The study examined other sets of factors that may increase or decrease the effects of the barriers.

1. Barriers – set of six factors that may negatively influence willingness (Adams & Berry, 2012; Balicer et al., 2006; 2010, 2011; Barnett et al., 2009; Burke et al., 2010; Cone & Cummings, 2006; Garrett, Park & Redlener, 2009; Goodhue et al., 2012; Masterson, Steffen, Brin, Kordick & Christos, 2009; Mercer et al., 2014; Mitani et al., 2003; Ogedegbe et al., 2012; Qureshi et al., 2005; Young & Persell, 2004).
2. Enablers – set of eight factors that may positively influence willingness (Yonge et al., 2010; Young & Persell, 2004).

3. Tasks – set of eight activities student nurses may be willing to perform during a disaster (Rosychuk et al., 2008; Schmidt et al., 2011; Yonge et al., 2010).
4. Altruism - the sense of moral obligation one feels about responding and personal belief about volunteerism (Yonge et al., 2010).
5. Nursing motivation – set of eleven possible reasons for becoming a nurse.
6. Disaster type – set of ten specific types of disasters (Adams & Berry, 2012; Masterson et al., 2009; Mercer et al., 2014; Qureshi et al., 2005).
7. Nursing student barriers – set of five factors related to being a nursing student (Mitani et al., 2003).

The following sections provide a review of previous research on the dependent variable, overall willingness, and the barriers selected as independent variables.

Dependent Variable

The dependent variable in this study is the perceived level of willingness of RN students to respond to a disaster. Adequate healthcare worker staffing is a critical component of a community's surge capacity to manage an influx of patients during a disaster. The existing nursing shortage in the United States becomes even more serious during a disaster because nurses make up the largest percentage of healthcare workers (Department for Professional Employees, 2014), making them naturally less available for disaster response from the outset. Hospitals have reported significant staff shortages following disasters such as Hurricane Katrina (Berggren & Curiel, 2006). Similar healthcare worker shortages may occur during future disasters such as an influenza pandemic (Mareiness, Hirshon & Thibodeau, 2009) or a radiological incident (Balicer et al., 2011). Healthcare workers' unwillingness to report to work can severely affect a facility's capability to provide medical care.

The present study modified the definition of willingness to respond provided in Chapter 1 to be more applicable to nursing students. Willingness to respond refers to a personal decision to respond to a disaster. Typically, individuals develop intentions to respond based on the personal

evaluation of a situation using criteria specific to his or her life. Failure to acknowledge that some paid healthcare workers and uncompensated volunteers will not respond during a disaster limits the effectiveness of disaster planning. Likewise, it affects the health and safety of healthcare workers and patients (Adams & Berry, 2012; Burke et al., 2010; Cone & Cummings, 2006; Davidson et al., 2009; Masterson et al., 2007; Mercer et al., 2014; Ogedegbe et al., 2012; Qureshi et al., 2005; Syrett et al., 2006). The notion of one's willingness is a complex issue affected by many different factors. For this reason, additional research was needed to better understand the factors that influenced the willingness of student nurses to respond to a disaster.

Independent Variables

The current study focused on the five most commonly identified barriers; concern for personal safety and well-being, responsibility for dependent children, concern for family safety and well-being, lack of disaster training and education, and specific type of disaster. Because it is relevant to the study population, this study also examined the barrier, being a nursing student. Due to the limited body of knowledge about willingness of nursing students to respond to disasters, findings from research among a broad base of employed healthcare workers provided the foundation for this study.

Concern for self.

According to the Occupational Safety and Health Administration (OSHA), "a hospital is one of the most hazardous places to work" (U.S. Department of Labor, Occupational Safety and Health Administration, 2013, p. 1). Routinely, healthcare workers must manage occupational hazards that threaten their safety and wellbeing. In 2010, healthcare workers missed more workdays due to injury and illness than workers in construction and manufacturing industries (U.S. Department of Labor, Occupational Safety and Health Administration, 2013). A study conducted by the American Nurses Association (2011) identified the effects of stress and overwork (74%), musculoskeletal injury (62%), and becoming infected with a contagious disease (43%) as the top health and safety concerns among registered nurses. In addition, healthcare

workers experience high rates of workplace violence (U.S. Department of Labor, Occupational Safety and Health Administration, 2015). Workplace violence includes physical assault and psychological abuse from patients and patient relatives, co-workers, supervisors, physicians, and others (Campbell et al., 2011). The stressful and chaotic environment often associated with disasters may exacerbate the existing hazards, which are present within a normal healthcare work environment. In addition, disasters can create new threats that may not exist within a typical healthcare work environment.

During a disaster, healthcare workers may need to work in difficult conditions. Concerns for their personal safety and well-being due to these difficult conditions may reduce healthcare workers' willingness to respond to a disaster. Previous research suggests that individuals may be less willing to respond to a disaster if they believe their personal safety may be threatened (Adams & Berry, 2012; Balicer et al., 2010, 2011; O'Boyle, Robertson & Secor-Turner, 2006; Qureshi et al., 2005).

A study conducted among non-clinical and clinical employees, including medical and nursing students, at the Johns Hopkins University demonstrates the effects of concern for personal safety on willingness to respond during an influenza pandemic (Balicer et al., 2010). The study found that 72% of respondents expressed willingness to report to work if they were asked but not required to report. Their willingness to respond increased to 83.7% if vaccines and daily preventative medications were available but decreased to 55.4% if these were not available. In addition, participants' willingness to respond decreased to 36.3% if personal protective equipment (PPE) was not available and 55.4% if workers were at risk of being quarantined (Balicer et al., 2010). These results clearly indicate that the level of willingness to respond decreased when respondents perceived a threat to their personal safety and did not have the resources to protect themselves.

Another study examining willingness of employees at the John Hopkins Hospital to respond to a radiological event found that 61% of respondents were willing to respond if asked

but not required to do so and 72% were willing if required. Willingness to respond increased to 83.7% if PPE was available but decreased to 36.3% if it was not available (Balicer et al., 2011). The findings of both studies demonstrated how concern for personal safety and wellbeing might affect an individual's willingness to respond. This is particularly important during such disasters as a contagious disease or radiological terrorist attack, which pose a significant health risk. Individuals, who do not believe they will be given the resources or do not possess the skills necessary to respond effectively while still protecting themselves, may be less likely to put themselves in a potentially harmful situation.

The ability to protect oneself when responding to different types of disasters significantly influences willingness to respond. Individuals perceive risks to personal safety differently depending on the type of disaster and the type of protection required and available. Studies indicate that healthcare workers believe their wellbeing is threatened more by a radiological terrorist attack, which requires specialized protective equipment, than by an influenza pandemic (Balicer et al., 2011), which can be prevented with vaccines and treated with medication.

Researchers have found a direct correlation between perceived risk and willingness to respond. Healthcare workers in a Midwest healthcare network were more willing to respond to an explosion with mass casualties (93%) and winter weather (92.8%) in which healthcare workers perceived low levels of risk to their personal safety (Adams & Berry, 2012). The same healthcare workers were less willing to respond to a SARS outbreak (74.6%) and radiological event (69.1%) for which they perceived greater risk.

Fortunately, previous research suggested it may be possible to mediate the effects of concern for personal safety and wellbeing by providing PPE (Balicer et al., 2010), vaccinations and prophylaxis (Balicer et al., 2010; Masterson et al., 2007; Syrett et al., 2006; Young & Persell, 2004), preferential medical treatment if injured or infected (Masterson et al., 2009), and adequate training (Balicer et al., 2011). The present study examined how concern for personal safety may affect student nurses willingness to respond during a disaster.

Concern for family members.

Healthcare workers have repeatedly indicated that the safety and wellbeing of family members affected their willingness to respond to a disaster (e.g. Balicer et al., 2010, 2011; Burke et al., 2010; Goodhue et al., 2012; O'Sullivan et al., 2009). The interaction between concern for family and willingness to respond to a disaster results in role conflict. Role conflict among emergency workers during a disaster has been the focus of a substantial amount of research (see Friedman, 1986; Killian, 1952; Quarantelli, 1978; Trainor & Barsky, 2011). I provide an overview of role conflict theory in the theoretical framework section later in this chapter.

Student nurses do not typically have a pre-defined emergency role; however, they do have a role as a citizen within a community affected by a disaster (Killian, 1952; Friedman, 1986). Unfortunately, few researchers have considered the potential role of student nurses in a disaster or investigated potential conflicts with other roles and responsibilities. Due to the lack of role conflict research among student nurses, the present study relied on research conducted among healthcare workers.

Disasters may expose healthcare workers to chemical or biological agents and illnesses that could put loved ones at risk. In addition, healthcare workers may fear for their families' safety and not want to leave them. Studies have found willingness to respond lower among healthcare workers who believe they may put their families in danger by responding (Balicer et al., 2010, 2011; Burke et al., 2010; Goodhue et al., 2012; O'Sullivan et al., 2009). A study among nurses in Canada after the 2003 SARS outbreak, reported that study participants experienced strong feelings of work-family conflict (O'Sullivan et al., 2009). The respondents believed that their occupation put their families at risk during an infectious disease outbreak. The nurses in the study felt guilt relating to putting their family members at risk, which caused them to question whether they would work during future outbreaks (O'Sullivan et al., 2009). According to Killian (1952), individuals most commonly choose to fulfill family responsibilities over other roles.

Even when healthcare workers are willing to respond, concern for their family may significantly distract them from their duties and inhibit their effectiveness (Davidson et al., 2009). Research suggests that reasons for concern include fear of transmitting an illness or disease to family members (Garrett et al., 2009; O'Boyle et al., 2006; Qureshi et al., 2005), desire to be with family during a disaster (Cone & Cummings, 2006), leaving family members on their own during a disaster (Davidson et al., 2009), and lack of household preparedness (Burke et al., 2010). A review of the literature revealed that this concern affects willingness to respond in almost one-half of study participants (Adams & Berry, 2012; Qureshi et al., 2005). For example, a study of healthcare workers at 47 New York hospitals found that 47.1% of respondents indicated concern for the safety and wellbeing of family as a reason for their unwillingness to respond to a catastrophic disaster (Qureshi et al., 2005). Another study similarly found 45.8% of respondents unwilling to respond during a disaster for the same reason (Adams & Berry, 2012).

Much like how perceived risk can influence concern for self, it also can influence concern for family. Healthcare workers are more willing to respond to a disaster for which they perceive a low level of risk to their family and less willing to respond when they believe there is higher risk to their family. For example, nursing students at a university in the mid-south who believed they might expose family members to a contagious agent were less likely to respond to a terrorist attack (Young & Persell, 2004). The study found that 90% of respondents would not volunteer during a bioterrorism event unless their family received vaccinations and other preventative treatment (Young & Persell, 2004).

Healthcare workers who believe their families are unprepared for a disaster and unable to function on their own are less likely to respond (Burke et al., 2010; Davidson et al., 2009). Research among healthcare workers at a hospital in Los Angeles, California found willingness to respond higher among respondents who believed that their families were prepared for a disaster such as a terrorist attack (Burke et al., 2010). Concern for the safety of their families also effects healthcare workers who do respond. Following the 2007 San Diego wildfires, researchers

conducted a study to identify factors that influenced the decision of healthcare workers at a San Diego hospital to report to work (Davidson et al., 2009). The study found that those "who lived in high risk areas reported distraction from patient care by the ongoing need to watch or listen to the developments in the disaster areas" (Davidson et al., 2009, p. 252). These results suggest that the healthcare workers were worried about their families and loved ones.

Healthcare administrators and emergency planners may be able to reduce the effects of concern for family members on willingness to respond. Providing care to family members and helping healthcare workers ensure that their family is prepared for disasters may increase healthcare workers' willingness to respond. A study conducted at a New York medical center, for example, found willingness to report to work during a contagious disease outbreak increased from 40% to 84% when family members received effective vaccinations and medical treatment (Syrett et al., 2006). Even when family members received an experimental treatment, willingness to respond increased from 29% to 60%. Researchers have recommended that employers not only educate healthcare workers on the need to develop a household preparedness plan and provide assistance to develop such a plan, but that employers also should include household preparedness in the annual performance review process (Qureshi et al., 2005). Due to its significant influence on willingness to respond, the present study sought to determine the extent to which concern for the safety and wellbeing of family members influenced willingness of student nurses to respond to disasters.

Responsibility for dependent children.

In the U.S., 30.5 million families have one or more parents that work outside the home (U.S. Bureau of Labor Statistics, 2015). In 6 out of 10 single-parent and married households, the parents work outside the home (Council of Economic Advisers, 2014). As a result, families are heavily dependent upon childcare. Approximately, 32.7 million children in the U.S. are in childcare arrangements with 61% of children birth to 5 years receiving care through childcare arrangements while parent(s) work (U.S. Census Bureau, 2011). Of the 61%, 42.1% are cared for

by relatives and 32.9% by nonrelatives. Older children, ages 5 to 14 years, receive childcare through different sources, 45% from relatives, 11% from nonrelatives, 15% through other arrangements such as after school care, and 16% through a combination of these sources (U.S. Census Bureau, 2011). Clearly, working parents depend on childcare in order to work outside the home. The literature reviewed for the present study clearly indicates that many healthcare workers have dependent children in their household, 36.1% (Garrett et al., 2009) to 59% (Burke et al., 2010). During a disaster, childcare providers may be unable to provide this critical service. As a result, healthcare workers may not be available—and therefore unwilling—to respond.

The effect of childcare on willingness to respond is evident in a study conducted at a New Jersey hospital in which 55% of respondents reported that caring for children would prevent them from reporting to work (Ogedegbe et al., 2012). Of the 55% of respondents who reported having childcare responsibilities, 35% indicated they would need assistance with childcare and 24% would use hospital-provided childcare (Ogedegbe et al., 2012), suggesting that if the hospital or healthcare facility offered onsite childcare in a disaster situation, employees may have stronger intentions about respond.

Another study examined healthcare workers' in two hospitals in Joplin, Missouri willingness to attend work after the 2011 tornado and for future disasters (Charney, Redmann & Flood, 2014). Researchers asked study participants questions about working the week after the 2011 tornado and about willingness to respond to future disasters. Almost half of the respondents (48.5%) had responsibility for dependent children. Of those with children, 89.8% reported to work the week after the tornado with 61.2% reporting they used childcare in order to work the week following the tornado and 59.8% implementing their alternate childcare plan. More than half of participants with children (51%) reported they would have used hospital-provided childcare services following the 2011 tornado if it had been available. In addition, hospital-provided childcare increased willingness to respond among 42.4% and reduced concern for the wellbeing and safety of children among 41.5% (Charney et al., 2014). Responsibility for

dependent children reduced respondent's willingness to respond to future tornado disasters (Charney et al., 2014). This may be due to anticipated uncertainty about childcare arrangements following future disasters.

Researchers have found that female healthcare workers with dependents are less willing to respond than males with children and females without children (Balicer et al., 2011; Mercer et al., 2014; Qureshi et al., 2005). This information is important because in the U.S., women make up 74.2% of healthcare practitioners and technical workforce (U.S. Bureau of Labor Statistics, n.d.), and women are often the primary care giver for dependent children. Mercer et al. (2014) concluded that when childcare is not available, the responsibility for the care of children falls to the woman. In addition, during a disaster when children may be afraid or vulnerable, women, who are often the primary care givers, may want to keep their children close by.

The available research indicates that willingness to respond may increase if healthcare workers have help meeting childcare needs. Healthcare administrators should seek to understand how childcare responsibilities may impact their employees during a disaster (Adams & Berry, 2012) and determine whether onsite childcare services can be provided to support healthcare workers (Adams & Berry, 2012; Chaffee, 2006; Charney et al., 2014; Ogedegbe et al., 2012). The present study examined the effects dependent children had on willingness of student nurses.

Disaster-related training and education.

Employees must learn the skills necessary to perform the functions of their job. Disasters present unique situations that may require different skill sets. Employees need training in order to function in these unique situations and use the different skill sets they do not use routinely. In addition to providing the knowledge and skills needed to respond during a disaster, training and education increases healthcare workers' self-efficacy in their ability to perform, thereby improving the likelihood that they will take the necessary and appropriate actions. Bandura (2009) stated, "Unless people believe that they can produce desired effects and forestall undesired

ones by their actions, they have little incentive to act or to persevere in the face of difficulties" (p. 179). Training and education enable such incentive.

Healthcare workers who believe they possess the knowledge and skills necessary to effectively respond to disasters and care for those affected are more willing to respond than those who do not (Balicer et al., 2006, 2010; Goodhue et al., 2012). Training ensures that healthcare workers are familiar with their roles in response activities, which increases their confidence and effectiveness during response. For example, one study examining the perceptions of public health workers about responding to an influenza pandemic found that healthcare workers who were familiar with their role-specific requirements were more than seven times more likely to report to work than individuals who were unfamiliar with their role (Balicer et al., 2006).

Balicer et al (2006) conducted a quantitative study among public health workers in three counties in Maryland to investigate perceptions regarding responding to an influenza pandemic. The researchers learned that only 33.4% of respondents believed they knew how a pandemic would affect public health. In addition, 23.1% reported being familiar with their role in response activities. The majority of respondents (83.8%) indicated that preparedness training was important. Likelihood of responding was higher among healthcare workers who were familiar with their role in response operations. In addition, individuals who were more knowledgeable about how influenza pandemic affects public health and were familiar with role specific response requirements were more confidents about their personal safety. Researchers concluded that educating public health workers to understand the importance of their role in response activities might increase willingness to respond. Another study by Balicer and colleagues (2011) examined the effects of personal characteristics and beliefs on willingness of employees at the Johns Hopkins School of Medicine and School of Nursing to respond to a radiological bomb. The study found that respondents who believed they possessed the skills for role-specific responsibilities and abilities to perform duties during a response were more willing to respond if required and if asked but not required to do so (Balicer et al., 2011).

In addition to training on one's role in response, healthcare workers also require training on the equipment used during a disaster. Certain types of disasters (e.g., a contagious disease or chemical, biological, or radiological disasters) require specialized PPE to protect healthcare workers. Such PPE as powered air purifying respirators and protective suits require training and practice to ensure proficiency (U.S. Department of Labor Occupational Safety and Health Administration, 2005). Unfortunately, because this equipment is not used often, healthcare workers may receive little-to-no training on how and when to use it. This lack of knowledge and practice with equipment can create significant issues during an incident in which healthcare workers must use the equipment to protect themselves and their patients. A study among healthcare workers at two hospitals in Baltimore, Maryland found that while 80% of respondents knew that using PPE could prevent the transmission of influenza, only 63% knew the types of equipment that would provide adequate protection (Daugherty et al., 2009). Healthcare workers who do not know how to use or are not confident in their ability to use protective equipment may be less willing to respond to a situation in which the equipment is critical to their safety and the safety of others (Irvin, Cindrich, Patterson & Southall, 2008).

Insufficient or inadequate disaster training may not only decrease healthcare workers' willingness to respond but also may increase their concern for the safety and wellbeing of themselves and their families. O'Boyle et al. (2006) examined the beliefs and concerns of nurses during of a bioterrorism event and found that respondents "feared that they lacked sufficient knowledge about disease agents, isolation procedures, and access to content resources" (p. 354). The nurses participating in the study associated their lack of knowledge with an increase in their risk of contracting the disease or transmitting it to their family members and other patients (O'Boyle et al., 2006). Another study among hospital employees at five hospitals in New York City found lack of training to be a significant barrier to willingness to work during a pandemic (Garrett et al., 2009). Garrett et al. (2009) suggested that a correlation might exist between lack of training and concern for the personal and family safety. By increasing a healthcare worker's

knowledge about prevention, preparedness, and response, it may be possible to decrease concern for the safety and wellbeing of themselves and their families.

Despite the reported lack of disaster training and education for healthcare workers, studies indicate that they believe it is important. For example, one study found that 84% of public health workers believed they needed disaster training (Barnett et al., 2009). Another study found that 69.4% of nurse participants wanted information about future training opportunities (Jacobson et al., 2010). In a study on willingness of hospital workers to respond to radiological disasters, 87% of respondents believed their employer should provide disaster training (Burke et al., 2011).

In addition to fully employed healthcare workers, researchers suggest that nursing students understand the importance of disaster preparedness and response education, and believe these subjects should be included in nursing degree programs (Jennings-Sanders, Frisch & Wing, 2005). For example, in studies among nursing students, 96% of respondents at the Cleveland State University School of Nursing (Jennings-Sanders et al., 2005) and 95.6% of student members of the National Student Nurse Association (NSNA) expressed a belief that disaster content should be part of nursing program curriculum (Schmidt et al., 2011).

Unfortunately, nursing students often do not receive sufficient disaster education at colleges and universities (Littleton-Kearney & Slepski, 2008; Weiner, Irwin, Trangenstein & Gordon, 2005). Only 53% of nursing degree programs in the United States provided any type of disaster preparedness and response curriculum (Weiner et al., 2005), even though its importance has been validated by research (Hilton & Allison, 2004; Littleton-Kearney & Slepski, 2008). A study sponsored by the International Nursing Coalition for Mass Casualty Education (INCMCE) examined disaster curricula among nursing schools in the U.S. (Weiner et al., 2005). Researchers found that even when disaster content was included in nursing degree programs; it may be inadequate. According to the study, schools offering disaster content spend only an average of four hours on the subject and faculty lack the expertise to teach the subject (Weiner et al., 2005).

The barrier presented by a lack of disaster-related training and education may be mitigated through the development and implementation of a training program. A training program can be robust enough to provide adequate knowledge to healthcare workers on an ongoing basis without requiring significant financial resources from the organization. In addition, emergency planners can develop just-in-time training information that they can provide immediately following a disaster. Researchers agree that educating healthcare workers on preventive and protective measures during a disaster, as well as regarding their role in preparedness and response activities, has the potential to increase willingness and likelihood of healthcare workers responding during a disaster. For this reason, it is important that healthcare workers, especially nurses, receive training and education to develop the knowledge needed to respond to a disaster (Jacobson et al., 2010; Veenema, 2006; Whetzel, Walker-Cillo, Chan & Trivett, 2013).

Type of disaster.

The likelihood that healthcare workers will be willing to respond varies depending on the type of disaster. A review of the literature found that healthcare workers were more willing to respond to natural disasters, such as tornadoes and fires, and less willing to respond to technological or human-caused disasters, such as a radiological event (Cone & Cummings, 2006; Mercer et al., 2014; Qureshi et al., 2005). For example, a study among healthcare workers at 47 hospitals in New York City found that willingness to respond to hypothetical but potential disasters ranged from 80.4% for a snowstorm to 57.3% for a radiological incident and 48.4% for a SARS outbreak (Qureshi et al., 2005). In another study, Cone and Cummings (2006) similarly found respondents to be more willing to report to work during a snowstorm (83%) and a flood (81%) and less willing to respond during a biological and chemical event (58%) and radiological event (57%). Masterson et al. (2009) learned that emergency department personnel in Chicago, Illinois were more willing to report to work for an airplane crash (98%) than a biological terrorist attack (54%). These finding are consistent with other studies among healthcare personnel (Adams & Berry, 2012; Burke et al., 2010; Mercer et al., 2014). Due to the variety of disasters that

continue to affect communities, it is important to understand how the type of disaster influences healthcare workers' willingness to respond. For this reason, the present study examined the effect of disaster type on nursing student's willingness to respond.

Being a college student.

To date, little is known about how being a college student might be associated with willingness to respond to a disaster. A search of extant literature found only one study that specifically examined the effects of being a nursing student on willingness to respond. Researchers in Japan examined the issues and concerns of Japanese professional nurses and nursing students when asked to respond following the Hanshin-Awaji Earthquake in 1995 (Mitani et al, 2003). The study respondents included 148 student nurses, of which only 11 (0.9%) responded to the disaster as part of relief teams. Of the remaining nursing student respondents, 125 (84.0%) cited *being a student at the time* as the reason for not responding (Mitani et al, 2003). Unfortunately, the researchers collected no information detailing what, in particular, about *being a nursing student* affected their willingness to respond.

Although, a search of the literature revealed little information about how being a nursing student might affect nursing students, research indicates that both community members and nursing students believe that healthcare students, including nursing students, have an obligation to respond. For example, a study examining the willingness of college students, faculty, and staff at the University of Alberta in Canada to volunteer during a pandemic found that 70% of respondents believed healthcare students, including student nurses, had a moral, ethical, and professional obligation to respond (Rosychuk et al., 2008). In addition, 79% of respondents believed that healthcare students, including nursing students, should be strongly encouraged to volunteer during a pandemic (Rosychuk et al., 2008). A second study conducted at the same university examined willingness of nursing students to respond during a pandemic (Yonge et al., 2010). The majority of respondents agreed that healthcare students, including student nurses, had a moral, ethical, and professional obligation to volunteer (70.7%) and should be encouraged to

volunteer (76.7%) during a pandemic. These results suggest that the role of being a student rather than a licensed professional may be in conflict with expectations. Based on the findings in the extant literature, the current study sought to understand how an individual's status as a nursing student effected his or her willingness to respond to a disaster.

Research Questions and Hypotheses

The following research questions and hypotheses guided the development and execution of this study.

1. To what extent do nursing students perceive themselves as being willing to respond to disasters?

2. What factors affect the willingness of nursing student to respond to disasters?

   $H1_0$ - There will be no statistically significant relationship between the presence or lack of dependent children in their household and the willingness of student nurses to respond to a disaster.

   $H1_a$ - Nursing students with dependent children will be less willing to respond to a disaster than those with no dependent children.

   $H2_0$ - There will be no statistically significant relationship between the level of concern for self and the willingness of student nurses to respond to a disaster.

   $H2_a$ - Concern for self will reduce willingness of nursing students to respond to disasters.

   $H3_0$ - There will be no statistically significant relationship between the level of concern for family and the willingness of student nurses to respond to a disaster.

   $H3_a$ - Concern for family/loved ones will reduce willingness of nursing students to respond to disasters.

$H4_0$ - There will be no statistically significant relationship between disaster education and the willingness of student nurses to respond to a disaster.

$H4_a$ - Nursing students who receive disaster training will be more willing to respond to a disaster than nursing students who receive no disaster training.

$H5_0$ - There will be no statistically significant relationship between being a college student and the willingness of nursing students to respond to a disaster.

$H5_a$ - Being a college student will reduce willingness of nursing student to respond to disasters.

3. To which types of disasters are nursing students most willing to respond?

   $H6_0$ - There will be no statistically significant relationship between disaster type (natural and human-caused) and the willingness of student nurses to respond to a disaster.

   $H6_a$ - Nursing student will be more willing to respond to natural disasters and less willing to respond to human-caused disasters.

Theoretical Framework

Researchers have used different theoretical perspectives and models to study individual willingness to respond to disasters. The theories include Crisis Theory (Young & Persell, 2004), the Theory of Planned Behavior (O'Boyle et al., 2006), the Extended Parallel Process Model (EPPM) (Balicer et al., 2010, 2011; Barnett et al., 2009), and the Health Belief Model (HBM) (Whetzel et al., 2013). Applying such theories aided in the development of hypotheses and assist in identifying potential new relevance. Two such theoretical frameworks guided the development of the current study: the Work-Family Role Conflict Theory and Risk Perception Theory. In addition, I utilized the construct of intention to examine willingness to respond.

Work-Family Role Conflict Theory

Balancing work and family demands is not easy. At times, the different roles an individual fills can create opposing demands for his or her personal resources such as time and energy. Because an individual has a limited amount of personal resources, scarcity of one or more may result in conflict for the available resources. Role conflict occurs when an individual experiences difficulty filling multiple roles (Killian, 1952). Inter-role conflict occurs when participation in one role, such as a workplace or family role, is difficult due to participation in the other role. Work-family conflict refers to "a form of inter-role conflict in which the role pressures from work and family domains are mutually incompatible" (Greenhaus & Beutell, 1985, p. 77). Healthcare workers may experience inter-role conflict between the expectations and demands of work and the expectations and demands of family (Ross & Altmaier, 1994). Work-family conflict is dual directional, which means work role may interfere with family role or family role can interfere with work role (Ahmad, 2008). Within work-family conflict, three subtypes exist: time-based conflict, strain-based conflict, and behavior-based conflict (Greenhaus & Beutell, 1985). Predictors of work-family conflict can be related to a job (e.g., role overload, shift work, overtime), family (e.g., number of children, childcare arrangements, family involvement), or individual (e.g., role values, self-efficacy) (Ahmad, 2008).

Role conflict often exists as a normal part of life when people fill more than one role without causing significant issues. Disaster situations exacerbate role conflict when one role demands the time and attention typically shared between roles (Friedman, 1986). Killian (1952) suggested that emergency workers experience role conflict during a disaster when their primary group membership takes a higher priority than a secondary group membership. It is important to note that role conflict is not the same as role abandonment. Role conflict is a perceived conflict an individual feels whereas role abandonment is what happens when a person succumbs to the feelings of conflict to abandon the responsibilities of one role for another. As the result of this role conflict, role abandonment may occur.

Role conflict is more common than role abandonment (Adams, 2007; Trainor & Barsky, 2011). For example, a study examining role conflict and role abandonment within New Orleans Police Department during Hurricane Katrina found that 79% of all police officers experienced conflict between their law enforcement duties and their family responsibilities (Adams, 2007). Officers reported reasons for experiencing role conflict such as, not being able to evacuate their family before the storm made landfall (70%), property damage (53.5%), and concern for the safety of family (37%). Adams (2007) suggested that emergency workers who are directly and personally affected by a disaster might experience role conflict, whereas workers who are not personally affected may not. The study also found that 147 police officers, either did not report for duty or left their post, both of which constituted role abandonment (Adams, 2007). While a significant percentage of the officers experienced role conflict (79%), only a small percentage (8.4%) actually abandoned their positions.

Researchers suggest that an individual's role during a disaster may conflict with familial roles (Dynes 1986; Killian, 1952; O'Sullivan et al., 2009; Prince, 1920). Role conflict was a key finding in one of the first disaster studies by S. H. Prince in 1920 and the subject continues to play a key role in disaster research. Much of the disaster related role conflict research has focused on emergency workers. While previous research provides some insight, the findings are not directly relevant to the population in the present study since student nurses are not emergency workers and therefore do not have the same professional responsibility as professional nurses and first responders.

Work-family role conflict within nursing.

Healthcare workers, including nurses, experience inter-role conflict between work and family (Grzywacz, Frone, Brewe & Kovner, 2006; Rosse & Rosse, 1981). Conflict can result from work interference with family or family interference with work. In addition, interference leading to conflict can occur chronically, such as nonstandard shift work, or periodically from emergent issues, such as a sick child (Grzywacz et al., 2006).

A study conducted by Grzywacz et al. (2006) examining work-family conflict among nurses in 29 states concluded that work-family role conflict is a significant issue among registered nurses due to such factors as staffing shortages, long hours, shiftwork, and excessive workload. Almost all respondents experienced some occurrence of work interference with family (91.8%) and more than half of participants experienced family interference with work (62.8%). More than half the respondents reported experiencing chronic work interference with family (50.4%) and episodic or periodic family interference with work (52.2%). The study defined *chronic* as one or more days per week and *episodic* as one to three days per month or less. Interestingly, the more hours a nurse worked each week, the more frequently they experienced work interference with family. This is an important finding as 51% of nurses in the U.S. work more than 40 hours per week (i.e., 30% more than 40 hours; 13% 46-50 hours; 8% more than 50 hours per week) (AMN Healthcare, 2013). In addition, nurses with dependent children at home experienced both work interference with family and family interference with work more frequently than nurses without children (Grzywacz et al., 2006). It is often difficult for parents to balance the demands of work and family (Boss, 2001).

Parents may experience high levels of conflict due to issues such as work hours and childcare. According to MacLennan (1992), working mothers may be highly susceptible to work-family conflict because they often bear a majority of family responsibility. Researchers contend that women may experience higher rates of work-family conflict because "the bulk of the domestic chores and responsibilities of home, child care arrangements, and the like fall onto the shoulders of the working woman" (Cartwright & Cooper, 1997, p. 120). Mothers of young children may be particularly susceptible to work-family conflict because they may experience high levels of guilt when they are away from their children at work (Cartwright & Cooper, 1997). This reality is particularly important to the present study as most nurses (91%) are women (U.S. Census Bureau, 2013a).

Research has demonstrated that work-family role conflict may cause healthcare workers to leave their profession (Greenhaus, Parasuraman & Collins, 2001). In addition, work-family role conflict may contribute to burnout among human services professions, such as nursing. According to Maslach (2003), "Burnout is a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do people-work" (p. 2). Nurses suffering from burnout often leave the field, thereby worsening the existing nursing shortage. Interestingly, a study among nursing personnel at an Illinois hospital found that work-family role conflict decreases over time with the highest level of conflict among registered nursing with less than one year on the job and lowest among registered nurses with five or more years on the job (Rosse & Rosse, 1981). These data suggest that student nurses, who may have little to no experience, may be at great risk of experiencing work-family conflict. It is important to examine whether and how work-family role conflict may affect student nurses since this type of conflict may intensify during a disaster.

Work-family role conflict in disasters.

Disasters are disruptive by nature and every disaster requires some level of healthcare participation in continuing care for existing patients, treating disaster victims, or caring for first responders. Disaster often create chaotic, dangerous, and high stress situations in which the factors associated with day to day work-family conflict may be intensified and new factors may arise. For example, childcare providers may be unable to care for a healthcare worker's children following a disaster. Another example concerns the potential for exposure to contagious diseases, which could result in quarantine during which the healthcare worker would be unable to be with family. In addition, during a disaster, healthcare workers may be preoccupied with one role even while they are attempting to meet the demands of another role.

The theory that role conflict exists between work and family has contributed significantly to research examining willingness to respond during disasters among first responders and healthcare workers (Trainor & Barsky, 2011). Of particular interest is the contribution that work-

family role conflict research among healthcare workers has provided to research among first responders. Trainor and Barsky (2011) have demonstrated a connection between role conflict and willingness to respond due to concern for personal safety, concern for the safety and wellbeing of family members, and childcare responsibilities.

Researchers contend that role conflict may reduce the willingness of healthcare workers to report to work during a disaster (Charney et al., 2014; O'Sullivan et al., 2009). Recent disasters, such as the SARS epidemic in 2003, Hurricane Katrina in 2005 and the H1N1 influenza pandemic in 2009, have given researchers the opportunity to investigate the willingness of healthcare workers to respond during real world situations. During and after a disaster event, hospital staff may confront challenges that affect decisions to report for work and perform effectively under potentially austere conditions. Research findings from recent disasters were similar to studies using hypothetical scenarios, corroborating the supposition that not all workers will report to work during a disaster (see Charney et al., 2014; Davidson et al., 2009; Dosa, Grossman, Wetle & Mor, 2007; Wong et al., 2010).

Risk Perception Theory

This study used risk perception theory to focus on an individual's belief about potential harm (Brewer et al., 2007). *Risk perception* refers to a "multifactorial phenomenon, involving the summation of actual risk and other peripheral influences independent of the actual risk" (Balicer et al., 2006, p. 100). It also refers to a multidimensional process in which an individual receives, interprets, and personalizes information about a threat (Sjoberg, 2000). Individuals assess a threat based on likelihood, susceptibility, and severity (Brewer et al., 2007). *Likelihood* refers to the "probability of being harmed by a hazard under certain behavior conditions" (p. 137). *Susceptibility* is an individual's vulnerability to a threat and severity is the "extent of harm a hazard would cause" (p. 137). These three constructs contribute to the decision making process to determine how an individual will respond to a threat.

Risk perception within nursing.

Nurses and other healthcare professionals work in high-risk environments daily. In the course of a routine workday, they can be exposed to contagious illnesses, hazardous agents, and potentially aggressive and violent behavior (Campbell et al., 2011). Additionally, risk of physical injuries (e.g., sprains, bruises, lacerations, and needle sticks) is high within the nursing profession (Perhats et al., 2012). According to OSHA, healthcare workers are at high risk of exposure to blood-borne pathogens from needle sticks (U.S. Department of Labor Occupational Safety and Health Administration, 2015). Due to their role in direct patient care, healthcare workers are at significant risk of exposure to such illnesses as a common cold or seasonal influenza and of transmitting that illness to patients and family members.

Researchers have used risk perception theory to examine hazards within the nursing profession. A study among critical care nurses in California found that 83% of participants believed they would experience a musculoskeletal injury within one year (Lee, Faucett, Gillen, Krause & Landry, 2013). In addition, risk perception has contributed to research on healthcare workers' attitudes toward the use of PPE (Daugherty et al., 2009; Moore et al., 2005). For example, Daugherty et al. (2009) examined the use of PPE to control the spread of influenza virus. For another example, Moore et al. examined personal factors that affect behavior intentions to use PPE to protect oneself from respiratory pathogens. Other researchers have conducted studies to examine the influence of risk perception on healthcare worker behavior such as participation in vaccination programs (Bellia, Setbon, Zylberman & Flahault, 2013; Clark, Cowan & Wortley, 2009; Corace et al., 2013; Lewthwaite et al., 2014; Yih et al., 2003). For example, a study conducted among healthcare workers in Ontario, Canada revealed the effects of risk perception constructs of likelihood, severity, and susceptibility on behavior (Corace et al., 2013). The study found that vaccination rates were higher among health care workers who believed they were at high personal risk of contracting H1N1 and that they were likely to transmit the virus to family members and patients (Corace et al., 2013). Vaccination rates were also higher among

healthcare workers who believed they were likely to get H1N1 if they did not receive the vaccination. In addition, healthcare workers who believed that influenza could have a severe impact on themselves, their family members, and their patients were more likely to receive the vaccination. Finally, vaccination rates were higher among healthcare workers with a chronic illness, had regular contact with children or elderly patients, and/or lived with someone or had a family member with a chronic illness (Corace et al., 2013).

Risk perception in disasters.

During a disaster, risks to healthcare workers may be exacerbated and new or unique hazards may occur. Healthcare workers' ability to function effectively during times of non-crisis and crisis depends, in part, on the ability to maintain situation awareness and to assess risks. In addition, they must evaluate the potential consequences of risks to themselves, their family members, co-workers, and patients. Researchers have used risk perception theory to examine whether and to what extent the perception of risk influences a healthcare worker's decision-making process when deciding whether to respond in a disaster or threatening situation (Balicer et al., 2006, 2011; Barnett et al., 2005).

Researchers suggest that risk perception may play a critical role in whether healthcare worker's respond during a disaster (Barnett et al., 2005. Previous research on the willingness of healthcare workers' to respond to disasters demonstrates the applicability of this theory and justifies its inclusion in the present study. For example, a study examining the willingness of public health workers in three Maryland counties to respond to a hypothetical influenza pandemic found that lack of knowledge, lack of understanding about one's role in response, and a lack of confidence in one's ability to communicate risk information were significantly associated with perceived personal risk. In addition, respondents who perceived a higher risk to personal safety were less willing to respond (Balicer et al., 2006).

For another example, researchers used risk-perception theory to examine differences in willingness to respond based on high and low levels of perceived threat and efficacy (Barnett et

al., 2009). The study found a strong relationship between risk perception and willingness to respond. Lower perceived risk and higher willingness to respond existed in situations of low threat and high response and self-efficacy. Situations of high threat and low efficacy resulted in higher risk perception and lower willingness to respond (Barnett et al., 2009).

Research has indicated that healthcare workers will take action to reduce the risk of harm to themselves and their family members (Corace et al., 2013). In addition, healthcare workers who believe that they or their family members could suffer injury or illness may be less likely to respond to a disaster (Masterson et al., 2009; Qureshi et al., 2005). Healthcare workers also may be less likely to respond to a specific type of disaster if they believe it poses a significant or unique threat to themselves or their family (Cone & Cummings, 2006; Gershon et al., 2010; Mercer et al., 2014; Qureshi et al., 2005). Finally, training and education may assist individuals to assess a threat, provide the necessary skills to respond to the threat, and increase willingness to respond (Gershon et al., 2010; Goodhue et al., 2011; Jacobson et al., 2010).

Intentions

The current study examined student nurse's willingness to respond as an individual's intention to volunteer since it was not possible to examine actual response actions. According to Fishbein and Ajzen (2010), there is no significant difference between willingness to perform a behavior and intention to perform a behavior. Researchers have intermingled willingness to perform and intentions to perform in studies examining behaviors such as performing bystander CPR (Coons & Guy, 2008), donating blood during a pandemic (Masser, White, Hamilton & McKimmie, 2012), and helping following a disaster (Marjanovic, Greenglass, Struthers, and Faye, 2009).

Theories such as the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 2010); Theory of Planned Behavior (Ajzen, 1985); and Protection Motivation Theory (Maddux & Rogers, 1983) agree that understanding intentions is critical to understanding, predicting, and even changing behavior. According to the TRA, a "person's intentions to perform

a given behavior is the immediate determinants of that behavior" (Ajzen & Fishbein, 1980, p. 58). The TPB stipulates that intentions predict an individual's attempt to perform a specific behavior (Ajzen, 1985). The PMT also contends that intentions are precursors of behavior (Maddux & Rogers, 1983). The stronger a person's intention is toward performing a certain behavior, the more likely it is that he or she will perform that behavior. Numerous studies have validated the effectiveness of intentions to predict behavior (Ajzen, Brown & Carvajal, 2004; Asare, 2015; Beck & Ajzen, 1991; Madden, Ellen, & Ajzen, 1992). Existing theories and models have identified numerous factors that affect the development of intentions and while each is important, the present study focused on personal attitudes and beliefs. According to the TRA and TPB, an individual's attitude and belief toward a behavior can influence intentions (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 2010).

Attitudes and beliefs.

Nursing is a caring profession (Watson, 2006, 2009). More specifically, "caring is a professional ethical covenant that nursing has with the public to sustain human caring in instances where it may be threatened" (Watson, 2009, p 469). The nursing profession "is supported by a societal sentiment that endorses the altruistic qualities of the work" (Newton et al., 2009, p. 398). Student nurses may be willing to help during a disaster due to preexisting values and attitudes that motivated them to enter the nursing profession. Individuals develop intentions based on their attitudes and beliefs about a specific behavior. In this context, the altruistic attitudes and beliefs held by nursing students about caring for and helping others may greatly influence willingness to respond to a disaster.

Altruism is the first of five core values of the nursing profession (American Association of Colleges of Nursing, 2008). Previous studies indicated altruistic factors such as the desire to help others significantly contributed to individuals' decisions to become a nurse (Newton et al., 2009; Raines, 2010; Rhodes, Morris, Lazenby, 2011). A study conducted in Australia among registered nurses and nursing students found the desire to help and care for others as the most

dominant factors that motivated individual's decision to become a nurse (Newton et al., 2009). A study at the Florida Atlantic University College of Nursing identified altruism as a key motivator among second degree-seeking nursing students (Raines, 2010). The study examined factors that motivated college graduate adults to change careers and enter the nursing profession. A third study by nursing faculty at Auburn University at Montgomery in Alabama investigated the factors that motivated current nursing students to pursue careers in nursing (Rhodes et al., 2011). The study found altruism to be the principal factor in the respondent's decision to become a nurse. In addition, respondents reported the desire to give of oneself without hesitation to be a characteristic of nurses.

A study conducted at the University of Alberta in Edmonton, Canada examined willingness of business students, nursing and public health students, and University staff to volunteer during a pandemic. The study found 66.8% of respondents believed healthcare students should be encouraged to volunteer during a pandemic (Rosychuk et al., 2008). Similarly, 59.6% of respondents believed healthcare students had a moral, ethical, and professional obligation to volunteer. The findings suggested a societal expectation for nursing students to help during a disaster. Additionally, the study suggested volunteering promotes social relationships and therefore encourages willingness to volunteer.

Previous research has found that altruistic behavior and social solidarity increase following a disaster (Barton, 1969; Dynes, 1994; Fritz, 1961; Quarantelli & Dynes, 1977; Tierney, Bevc & Kuligowski, 2006). Based on available literature, it is possible that the same altruistic attitude and beliefs that influence individuals to become nurses will also influence their willingness to help during a disaster. Individuals who have high levels of altruism in non-disaster times, such as student nurses, would maintain or exceed their pre-disaster feelings of altruism. Researchers have investigated the role of altruism during disasters such as the terrorist attacks of September 11, 2001 (Lowe & Fothergill, 2003) and Hurricane Katrina in 2005 (Rodriguez, Trainor & Quarantelli, 2006).

A study of individuals who volunteered immediately after the attack on the World Trade Center on September 11, 2005 found respondents felt an overpowering need to help (Lowe & Fothergill, 2003). The study participants reported a strong compulsion to help and did so by performing a variety of tasks such as giving blood, making food, and providing encouragement to first responders (Lowe & Fothergill, 2003). Similarly, researchers examining the responses of individuals and groups in Louisiana after Hurricane Katrina found high levels of socially conscience behavior (Rodriguez, Trainor & Quarantelli, 2006).

This study examined willingness to respond as a behavior intention; however, immediately following a disaster the altruistic characteristics within nursing students could increase actual actions to respond. Individuals who reported an unwillingness to respond may be motivated to respond during an actual event. According to Krebs (1987), humans may be genetically predisposed to help others. Researchers contend that an evolutionary element, altruistic impulse, exists within individuals, which elicits prosocial behavior such as altruism (Piliavin & Charng, 1990). It is possible that this element exists within people in caring professions such as student nurses, making them willing to help others following a disaster.

Summary

A substantial body of knowledge exists on the willingness of healthcare workers to respond to a disaster. The available research suggests that as many as 53% of healthcare workers, including nurses, are unwilling to respond during a disaster when they are needed most (Burke et al., 2010). In addition, researchers have identified various factors that affect willingness to respond. When a disaster occurs, healthcare facilities will need an alternative source of personnel to assist healthcare staff to care for existing patients as well as disaster victims. Student nurses may be a resource to provide support to healthcare facilities; however, whether they are willing to respond is largely unknown.

CHAPTER III

RESEARCH METHODOLOGY

As described in Chapter 1, the purpose of this study was to examine the willingness of nursing students to respond to a disaster and identify factors that affect the level of willingness to respond. Using the theoretical constructs from the literature, the present study analyzed a variety of factors that might influence willingness to respond. This chapter consists of an overview of study's research design and methods, a description of the variables and data collection methods, data analysis procedures, and information about reliability and validity of variable constructs and the survey instrument.

To date, few studies have comprehensively investigated the willingness of nursing students to respond to disasters although they could serve as valuable resources following a disaster. The current study sought to explore three research questions and test related hypotheses to provide a foundation for future studies on this population group.

1. To what extent do nursing students perceive themselves as being willing to respond to disasters?

2. What factors affect the willingness of nursing student to respond to disasters?

   $H1_0$ - There will be no statistically significant relationship between the presence or lack of dependent children in their household and the willingness of student nurses to respond to a disaster.

   $H1_a$ - Nursing students with dependent children will be less willing to respond to a disaster than those with no dependent children.

   $H2_0$ - There will be no statistically significant relationship between the level of concern for self and the willingness of student nurses to respond to a disaster.

   $H2_a$ - Concern for self will reduce willingness of nursing students to respond to disasters.

   $H3_0$ - There will be no statistically significant relationship between the level of concern for family and the willingness of student nurses to respond to a disaster.

   $H3_a$ - Concern for family/loved ones will reduce willingness of nursing students to respond to disasters.

   $H4_0$ - There will be no statistically significant relationship between disaster education and the willingness of student nurses to respond to a disaster.

   $H4_a$ - Nursing students who attend disaster training will be more willing to respond to a disaster than nursing students who receive no disaster training.

   $H5_0$ - There will be no statistically significant relationship between being a college student and the willingness of nursing students to respond to a disaster.

   $H5_a$ - Being a college student will reduce willingness of nursing student to respond to disasters.

3. To which types of disasters are nursing students most willing to respond?

   $H6_0$ - There will be no statistically significant relationship between disaster type (natural and human-caused) and the willingness of student nurses to respond to a disaster.

   $H6_a$ - Nursing student will be more willing to respond to natural disasters and less willing to respond to human-caused disasters.

Research Design and Methods

The research methods for social sciences developed by Frankfort-Nachmias et al. (2014) guided the design and methodology of the current study. The study employed a quantitative approach with a cross-sectional survey research design to examine the willingness of individual nursing students to respond to disasters. The quantitative research approach uses statistical procedures to describe response data and test hypotheses (Frankfort-Nachmias et al., 2014). Social scientists often use a cross-sectional survey research design to examine relationships among variables using a subset of a population to make statistical inferences to broader a population (Frankfort-Nachmias et al., 2014).

Study Population and Sampling

The study population (N) for this study consisted of 940 nursing students enrolled in baccalaureate nursing programs at the University of Utah (U of U) College of Nursing (CoN) and the Arkansas State University (ASTATE) College of Nursing and Health Professions (CoNHP) during the Spring 2016 semester. The student population was restricted to baccalaureate nursing students to ensure a common characteristic among the study population. The ASTATE offers an associate nursing degree; however, the U of U does not offer an associate level nursing program. Focusing the study on baccalaureate students ensured a level of commonality among the population between the two universities.

The study's nonprobability convenience sample (n) size was 398. The sample consisted of 317 students enrolled in the Bachelors of Science in Nursing (BSN) degree program at the University of Utah (U of U) College of Nursing (CoN) in the Spring 2016 semester and 81 BSN

students enrolled in the Spring 2016 Introduction to Nursing Research course at the Arkansas State University (ASTATE) College of Nursing and Health Professions (CoNHP). Based on the study population of 940, a confident level of 95% and confidence interval of 5%, the sample size needed for this study was 273. I used a free online sample size calculator available from Creative Research Systems.

University of Utah

The U of U CoN baccalaureate degree enrollment for the Spring 2016 semester was 317 (B. Vawdrey, personal communication, March 9, 2017). I selected the U of U CoN as a research site for geographic proximity and convenience reasons. As a research university, the U of U was supportive of academic research. I gained access to the student population through Dr. Connie Madden, Assistant Dean for the U of U CoN baccalaureate program. I contacted Dr. Madden to request permission to conduct the research. Dr. Madden agreed to disseminate the research survey via email to CoN students (C. Madden, personal communication, January 4, 2016). Appendix 1 of this proposal is the email communication between Dr. Madden and myself. I emailed the survey to Dr. Madden for review on January 4, 2016. In addition to Dr. Madden, I also met with Dr. Rebecca Wilson, U of U College of Health Sciences Interprofessional Education Program Director, and Phillip Chaffee, U of U College of Health Sciences Emergency Manager, to establish trust and gain their support for this research project. Upon approval from the Oklahoma State University Institution Review Board, Dr. Madden distributed the participant email letter to CoN BSN students.

Arkansas State University

The total BSN enrollment for the ASTATE CoNHP for the Spring 2016 semester was 623 (J. Rorex, personal communication, March 10, 2017). The nonprobability sample consisted of 81 students enrolled in the Spring 2016 Introduction to Nursing Research course (P. Wimberley, personal communication, April 27, 2016). The restricted subset to BSN students in

one course may result in a sampling error among the ASTATE sample; however, I received permission to conduct the study only among students enrolled in a specific course.

I selected ASTATE CoNHP as a research site primarily because the school included disaster-related curricula in its nursing degree programs. For example, all undergraduate nursing students must complete an 8-hour course "Basic Disaster Life Support" as a graduation requirement. I met with Dr. Debbie Persell, Program Director of the Regional Center for Disaster Preparedness Education at ASTATE CoNHP on December 2, 2015 to discuss the present study. Dr. Persell is the co-author of a study conducted in the U.S. that examined willingness of student nurses to respond to a biological, chemical, or nuclear terrorist attack (Young & Persell, 2004). The findings from that study are included in the literature review of the present study. Dr. Persell introduced me to Dr. Angela Schmidt, Associate Dean of ASTATE CoNHP. Dr. Schmidt indicated a willingness to assist in this research study and introduced me to Professor Renee Miller, Chair of the Associate of Science in Nursing program and Professor Annette Stacy, Chair of the Bachelors of Science in Nursing program at ASTATE CoNHP (A. Schmidt, personal communication, December 14, 2015). Appendix 2 provides the email communication between Dr. Schmidt and myself. I sent an email to both professors on December 15, 2015 requesting permission to conduct the study among undergraduate nursing students. Professor Stacy introduced Dr. Paige Wimberely, Assistant Professor of Nursing, who teaches undergraduate nursing research at ASTATE CoNHP (Appendix 3). I spoke with Dr. Wimberley by telephone on January 15, 2016 and followed up with an email, which included the draft research survey. Dr. Wimberley agreed to allow students enrolled in the Spring 2016 Introduction to Nursing Research class to participate in the study. Dr. Wimberley's approval is Appendix 4. Upon approval from the Oklahoma State University IRB, Dr. Paige Wimberley, distributed the informed consent form (Appendix 5) and initial participant email (Appendix 8), which included a link to the online survey. Using faculty as a champion of the research project served to establish trust and ensure an adequate response rate (Dillman, Smith, & Christian, 2014).

Description of Participants

A total of 398 baccalaureate-nursing students, 317 students at the U of U CoN and 81 students at ASTATE CoNHP, received the participant letter and link to the survey on SurveyMonkey™. Of those 398 students, 110 students completed and submitted the survey yielding a response rate of 27.6%. The average response rate for online surveys is 30% (Saldivar, 2012). The research recognized the response rate in the present study was 2.4% below the average rate.

Table 3.1 details the demographic characteristics of the study participants by university compared to the study population. The universities were unable to provide age, marital status, or dependents details for Spring 2016 semester. Table 3.2 compares the demographic composition of the study population to the national student demographic. The AACN does not collect data on age, marital status, or dependent information.

Table 3.1

Demographics of Study Participants by University and Study Population

	Characteristic	U of U CoN (n = 41)	ASTATE CoNHP (n = 69)	Study Participants (n=110)	Study Population (N=940)
Gender	Male	6 (14.6%)	4 (5.8%)	10 (9.1%)	171 (18.2%)
	Female	35 (85.4%)	65 (94.2%)	100 (90.9%)	766 (81.5%)
	Unknown	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (0.3%)
Ethnicity	White	37 (90.2%)	62 (89.9%)	99 (90.0%)	756 (80.4%)
	Black or African American	3 (7.3%)	5 (7.2%)	8 (7.3%)	82 (8.7%)
	Asian, Native Hawaiian or Pacific Islander	1 (2.4%)	1 (1.4%)	2 (2.6%)	24 (2.6%)
	Hispanic or Latino	0 (0.0%)	1 (1.4%)	1 (1.7%)	16 (1.7%)
	American Indian or Alaska Native	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (0.4%)
	Two or more races	0 (0.0%)	0 (0.0%)	0 (0.0%)	40 (4.3%)
	Unknown	0 (0.0%)	0 (0.0%)	0 (0.0%)	18 (1.9%)
Age Group	<20	0 (0.0%)	1 (1.7%)	1 (0.9%)	*
	20 to 29	29 (70.7%)	49 (81.7%)	78 (70.9%)	
	30 to 39	10 (24.4)	8 (13.3%)	18 (16.4%)	
	40 to 49	2 (4.9%)	1 (1.7%)	3 (2.7%)	
	>50	0 (0.0%)	1 (1.7%)	1 (0.9%)	
	Not provided	0 (0.0%)	9 (13.0%)	9 (8.2%)	
Marital Status	Never been married	25 (61.0%)	45 (65.2%)	70 (63.6%)	*
	Married	12 (29.3%)	17 (24.6%)	29 (26.4%)	
	Unmarried partner	3 (7.3%)	4 (5.8%)	7 (6.4%)	
	Widowed	0 (0.0%)	1 (1.4%)	1 (0.9%)	*
	Divorced	1 (2.4)	2 (2.9%)	3 (2.7%)	
Dependents	Yes	5 (12.2%)	12 (17.4%)	17 (15.5%)	
	No	36 (87.8%)	57 (82.6%)	93 (84.5%)	

Note. Age, marital status, and dependents not collected by Universities.

Table 3.2

Demographics of Study Population and Nationwide BSN Student Population

Characteristic		Study Participants (n=110)		Study Population (N=940)		Nationwide BSN Student Population (331,703)	
Gender	Male	10	(9.1%)	171	(18.2%)	41,627	(12.5%)
	Female	100	(90.9%)	766	(81.5%)	287,684	(86.7%)
	Unknown	0	(0.0%)	3	(0.3%)	2,392	(0.7%)
Ethnicity	White	99	(90.0%)	756	(80.4%)	211,203	(69.3%)
	Black or African American	8	(7.3%)	82	(8.7%)	32,450	(10.7%)
	Asian, Native Hawaiian or Pacific Islander	2	(2.6%)	24	(2.6%)	22,119	(7.3%)
	Hispanic or Latino	1	(1.7%)	16	(1.7%)	29,877	(9.8%)
	American Indian or Alaska Native	0	(0.0%)	4	(0.4%)	1,634	(0.5%)
	Two or more races	0	(0.0%)	40	(4.3%)	7,269	(2.4%)
	Unknown	0	(0.0%)	18	(1.9%)	0	(0.0%)

Note. Age, marital status, and dependents not collected AACN.

The majority of study participants were white (90.0%, n = 99), female (90.9%, n = 100), ages 20 to 29 (70.9%, n = 78), and never married (63.6%, n = 70). Very few participants reported having dependent children in their household (15.5%, n = 17). A comparison of study participants and the study population found similarities with the majority of student being white (80.4%, n = 90.0) and female (81.5%, n = 90.9). Ethnic minorities comprised less than 20% of both groups (19.6%, n = 10.0).

The nationwide baccalaureate student body was more ethnically diverse then the study population with 11.1% more non-white students. The study population included 5.7% more male students (18.2%) than the national student nursing body (12.5%). The study participants were less ethnically diverse than the national student body with 20.7% more White students and 3.4% fewer Black or African American; 5.5% fewer Asian, Native Hawaiian or Pacific Islander; 8.9%

fewer Hispanic or Latino; 0.5% fewer American Indian or Alaska Native students; and 2.4% fewer students of two or more races.

Participant Protection

The Oklahoma State University Institution Review Board (IRB) approved the study on March 31, 2016 (Appendix 8). I conducted the study in accordance with the Oklahoma State University guidelines for human subject research. Ethics are critical components of human subject research. Key elements of ethical research in this research study included respecting the study population, minimizing potential harm, and ensuring confidentiality of responses.

Researchers must respect the subjects of their research. According to Johnson and Reynolds (2011), the foundation of this respect is that participants have a choice of whether or not to participate and can determine what will or will not happen to them. I ensured that participation in this study would not cause harm to participants. No one associated with the current research project pressured any nursing student to participate in the study and there were no negative consequences for choosing not to participate. Students were able to stop participating in the study at any time before they submitted their responses to the online survey. Additionally, I built confidentiality measures into the data collection process. To ensure confidentiality, the survey will not require the participant's name. The questionnaire did not collect any type of personally identifiable information, thereby ensuring respondent anonymity.

I provided detailed information about informed consent to study participants twice. Participants received information in the initial participant letter, which the faculty at U of U CoN and ASTATE CoNHP disseminated to the undergraduate student nurses. The first page of the survey website provided detailed information about the research project. Prior to accessing the survey online, individuals read an informed consent statement and selected either "yes" or "no" to indicate their understanding of the parameters of the study and whether they were willing to participate (see Appendix 8). Selecting "yes" allowed them to continue to the survey questions. Individuals, who selected "no", indicating they did not want to participate, did not gain access to

the survey questions and were automatically redirected to a page that contained statement thanking them for their time. Once respondents completed the survey and submitted their responses, a thank you statement appeared automatically. The thank-you statement reiterated the value of their participation to the study to develop an understanding of nursing student's willingness to respond to disasters.

Survey Instrument

Cross-sectional research often uses surveys to collect data. Surveys can provide an effective and efficient means to gather data (Bird, 2009). In addition, surveys allow researchers to examine attitudes and opinions of a population through statistical analysis (Creswell, 2014). I developed the study survey using applicable questions from studies reviewed in Chapter 2. For example, I adapted questions 1 and 2 from a study by Burke et al. (2010), questions 3 through 5 from studies conducted by Rosychuk et al. (2008) and Yonge et al. (2010), and questions 7 through 11 from Qureshi et al. (2011). In addition, two experts in nursing academia reviewed the questionnaire and provided feedback; Dr. Madden from U of U CoN and Dr. Wimberley from ASTATE CoNHP. Although I adapted questions from previous studies, certain measures within the survey required testing for validity and reliability. Later in this chapter, I describe the measures used to assess validity and reliability.

Measures

The survey consisted of twenty-four questions designed to collect data on demographics, willingness to respond, barriers to responding, and other concepts including altruistic factors (see Appendix 6). The survey contained twenty-two closed-ended questions with different response formats including Yes/No, multiple response items, 5-point Likert items, and open-ended responses. Additionally, the questionnaire contained two open-ended questions. I assigned a numerical rank value to each level of the 5-point Likert items. The numerical values ranked the levels from 1, the most negative, to five, the most affirmative. I grouped the questions by topic to make it easier for respondents to answer and to be more conversation-like (Dillman et al., 2014).

According to the Tailored Design Method, the first question of a research survey should reflect the topic of the study (Dillman et al., 2014). For this reason, the first two questions focused on willingness to respond. Both questions contained two subparts, which measured willingness to respond to natural disasters and human-caused disasters. Question 2 served as a reliability check for the willingness construct in Question 1 because it is important to check the reliability of the questionnaire's individual items, sometimes through differently worded questions that seek a consistent response (Frankfort-Nachmias et al., 2014). To this end, I assessed the correlation between responses to the subparts of Question 1 and Question 2. Later in this chapter, I provide a detailed explanation of validity and reliability checks for constructs measured by the research survey.

Question 3 examined what types of tasks respondents may be willing to perform. Question 4 assessed respondent's attitude toward responding to a disaster by measuring the level agreement about the moral obligation of student nurses to respond to disasters based on Paladin and Charny's (1990) concept of moral obligation. Question 5 investigated factors that motivated individuals to enter the nursing profession. Question 6 assessed the participant's belief about volunteering during a disaster by asking if they believe they should be encouraged to volunteer during a disaster. Question 7 identified individuals currently involved with volunteer disaster response organizations. Question 8 examined barriers that may negatively affect willingness to respond. Questions 9 and 10 measured the level of concern for personal well-being and family safety.

Question 11 identified whether there were dependent children in the respondent's household. SurveyMonkey directed respondents who answered "Yes" to question 11 to question 11a; all other respondents progressed to question 12. Question 11 is an example of a filter question. Responses to the filter questions determined the respondent's next question. Interactive features such as filter and contingency questions may reduce confusion among those completing the survey by skipping questions that do not pertain to those individuals (Dillman et al., 2014).

Questions 11a through 11e were contingency questions about dependent children. Question 11a examined how many children are in the household. Question 11b collected the age(s) of the dependent children based on the categories used by the U.S. Census Bureau (2013b). Question 11c investigated whether the respondent is the sole guardian of the dependent children. Question 11d assessed the use of childcare services, and question 11e measured the perceived difficult of arranging for childcare during a disaster.

Question 12, a filter question, examined whether respondents have attended disaster courses through their university. Respondents who answered, "Yes" to question 12 moved to question 12a whereas respondents who answer "No" progressed to question 13. Questions 12a and 12b were contingency questions to assess the extent and type of training. Question 13 assessed the importance of disaster training in nursing curriculum.

Question 14 examined the types of disasters to which respondents are willing to respond. Each type of disaster listed in question 14 included a brief scenario description to ensure a common understanding among participants. I developed the scenarios based on a review of the Arkansas and Utah hazard mitigation plans (Arkansas Department of Emergency Management, 2013; Utah Division of Emergency Management, 2014) as well as scenarios used in previous studies on willingness of healthcare workers to respond to disasters (Qureshi et al., 2005; Adams & Berry, 2012). Table 3.3 details the scenario for the ten disasters used in the survey.

Table 3.3

Scenario Descriptions for Each Type of Disaster

Type of Disaster	Scenario
Earthquake	A 6.5 magnitude occurs at 10:00 AM occurs with the epicenter within 5 miles of your home. Roads and buildings are damaged; electricity is out. Many people are injured or dead while many others are missing.
Winter Storm	A winter storm with 6 inches of snow and 3 inches of ice occurs where you live in a 24-hour period.
Tornado	An F4 tornado has injured hundreds of people in your community.

Flood	Heavy rain has caused significant flooding in your community. Hundreds of residences have been evacuated to shelters.
Mass Casualty Incident	An explosion has occurred at a local oil refinery with 200 people seriously injured and taken to local hospitals.
Influenza Pandemic	Outbreak of pandemic influenza in your community with more than 600 reported cases.
Infectious Disease Outbreak	Outbreak of SARS in your community with more than 30 patients admitted to local hospitals.
Biological Terrorist Attack	Smallpox outbreak in your community with 200 patients admitted to local hospitals. The media has reported that a terrorist group is claiming responsibility for intentionally releasing the disease.
Chemical Terrorist Attack	Chemical terrorism attack involving release of substance during a football game at the University's football stadium. More than 1,000 victims have been brought to local hospitals.
Radiological Terrorist Attack	Radiological bomb explodes at the local fairground during the annual fair. Thousands of people are arriving at local hospitals.

Question 15 examined factors associated with being a nursing student in college. Question 16 identified strategies that might increase willingness to respond. Respondents identified their university and level of degree program in questions 17 and 18. Question 19 asked whether respondents hold a current emergency or healthcare license. SurveyMonkey directed respondents who answer "Yes" to question 19 to question 19a whereas respondents who answer "No" moved on to question 20. Questions 19a through 19c were contingency questions relating to current licensure. Questions 20 through 23 collected demographic information such as marital status, gender, and ethnicity. Question 24 was an open-ended question, in which respondents could add any other information they would like to share about their willingness to respond.

SurveyMonkey allowed me to create logic commands for Questions 11, 12, and 19. The logic commands automatically directed respondents to the next appropriate question based on their responses. Table 3.4 provides a detailed description of the data collection method for each survey question.

Table 3.4

Survey Questions and Response Formats

Outcome	Measures
Willingness to respond a. natural disaster b. human-caused disaster	Question 1a: One statement using Likert scale, from 5 (completely willing) to 1 (not at all willing) Question 1b: One statement using Likert scale, from 5 (completely willing) to 1 (not at all willing)
Willingness to respond a. natural disaster b. human-caused disaster	Question 2a: One statement using Likert scale, from 5 (strongly agree) to 1 (strongly disagree) Question 2b: One statement using Likert scale, from 5 (strongly agree) to 1 (strongly disagree)
Factors	
Tasks willing to perform	Question 3: Eight items with Yes/No/Not sure response options and an "other" option that allows the respondent to provide one or more additional responses
Perceived obligation and current volunteer status	Question 4: One statement using Likert scale, from 5 (strongly agree) to 1 (strongly disagree)
Motivation to enter nursing profession	Question 5: Eleven items with Yes/No/Not sure response options and an "other" option that allows the respondent to provide one or more additional responses
Encouraged to volunteer	Question 6: One statement using Likert scale, from 5 (strongly agree) to 1 (strongly disagree)
Current volunteer status	Question 7: Yes/No question
Barriers	Question 8: Six items with Yes/No/Not sure response options and an "other" option that allows the respondent to provide one or more additional responses
Concern for self	Question 9: One statement using Likert scale, from 5 (strongly agree) to 1 (strongly disagree)
Concern for family	Question 10: One statement using Likert scale, from 5 (strongly agree) to 1 (strongly disagree)
Responsibility for dependent children	Question 11: Yes/No question Question 11a: One statement with six response options Question 11b: One statement with eight response options Question 11c: Yes/No question Question 11d: Yes/No question Question 11e: One statement using Likert scale, from 5 (strongly agree) to 1 (strongly disagree)
Attended formal disaster training as part of degree program	Question 12: Yes/No question Question 12a: One question with five response options Question 12b: Open-ended question

Should disaster curricula be included in nursing degree programs	Question 13: Yes/No question
Type of disaster	Question 14: Ten items with Willing/Not willing/Not sure response options
Being a nursing student	Question 15: Five items with Yes/No/Not sure response options and an "other" option that allows the respondent to provide one or more additional responses
Enablers	Question 16: Seven multiple response options and an "other" option that allows the respondent to provide one or more additional responses
Demographics	
University	Question 17: Two response options
Degree program	Question 18: Two response options
Current licensure and employment	Question 19: Yes/No question Question 19a: Six response options Question 19b: Yes/No question Question 19c: Yes/No question
Marital status	Question 20: Five response options
Gender	Question 21: Two response options
Race	Question 22: Eight response options
Age	Question 23: Open-ended question
Optional input	Question 24: Open-ended question

Survey Implementation

As described in previous sections, I used SurveyMonkey™ to collect data from nursing students at the U of U CoN and ASTATE CoNHP. Appendix 7 provides the informed consent form and survey created with SurveyMonkey™.

Online Surveys

The online survey offered many advantages to data collection. Advantages included cost effectiveness, rapidity of data collections, convenience, sufficient response time, ease of follow up, confidentiality and security, and the ability to target specific individuals or groups (Rea & Parker, 2005). Previous research suggested an online survey might be the most prudent method of data collection for this study population. According to Dillman et al. (2014), college students tend to be responsive to Internet surveys (see also Mitra, Jain-Shukla, Robbins, Champion & Durant,

2008; Sax, Gilmartin, Lee & Hagedorn, 2008; Shih & Fan, 2008). Indeed, a meta-analysis of survey response rates among specific population groups found response rates for online surveys higher than mail surveys among college students (Shih & Fan, 2008). Web-based surveys are most appropriate for study populations who use computer technology such as nursing students (Carini, Hayek, Kuh, Kennedy & Ouimet, 2003). College students, including student nurses, appear to use the Internet more frequently than the general population (Jones, Johnson-Yale, Millermaier, & Perez, 2009). Research also suggested that online surveys were an effective way to collect data among nurses due to their potentially positive attitude toward technology (Jones, Murphy, Edwards & James, 2008; Maag, 2006). The current study assumed that all participants had a personal computer, access to a computer through their University, or other access to the Internet through a mobile device—any of which would help achieve an acceptable response rate (Rea & Parker, 2005).

I evaluated the technological capabilities of the study population prior to selecting SurveyMonkey™ as the data collection tool. Nursing students at both Universities frequently use computers, email, and the Internet in their education and should be comfortable with an online survey. The ASTATE CoNHP and U of U CoN offer both traditional (classroom) and distance (online) undergraduate programs. Additionally, all nursing students at both institutions had a designated school email address which faculty used to disseminate the participant letters. A web-based survey instrument provided an effective method to ensure that every student nurse within the same population had the same opportunity to participate because each one received the participation letter and link to the survey through a school-provided email address.

Although survey questionnaires can be effective, there are potential issues with this form of data collection. While not an issue in the present study, limited computer and email access or unfamiliarity with computer technology or the Internet could be significant disadvantages of online surveys (Rea & Parker, 2005). Other issues might include lack of interviewer involvement (Rea & Parker, 2005), lack of understanding or clarity of instructions, and concern for

confidentiality and security of information (Dillman et al., 2014).

I devised the following actions to mitigate potential issues arising from the identified disadvantages. First, I asked faculty members from both universities to distribute the survey to undergraduate nursing students. Potential respondents will trust an email from a faculty member more than from an unknown person. In addition, faculty distribution offered a sense of legitimacy to the research study and survey. To reduce security and confidentiality concerns, the survey did not collect any type of personal identification information. Finally, I took measures to minimize issues resulting from the absence of a trained interviewer who could explain the research study, provide instructions, and explore the answers of the participants. I developed an email letter, which provided detailed information about the study and specific instructions on how to access and complete the survey. I also developed follow-up email letters and sent the emails two weeks, four weeks, and five weeks after the initial email to encourage participation. While it may not be possible to mitigate all disadvantages associated with online surveys, the outlined strategies may have eliminated or reduced many and improved participation in the survey. Any remaining issues should have minimal effect on participation due to the saliency of the research topic among the study population; according to Dillman et al. (2014), participation can be higher when respondents find the topic to be significant to their lives. Previous research indicated disaster education was important to nursing students (Jennings-Sanders et al., 2005; Schmidt et al., 2011). In addition, student nurses have expressed that disaster preparedness and response are important activities for the nursing profession (Adams & Canclini, 2008; Jennings-Sanders et al., 2005).

Data Collection

The survey opened on March 28, 2016 and remained open for a six-week period during which nursing students could choose to respond. I provided an email participant letter (appendix 8) to Dr. Madden, U of U CoN, and Dr. Wimberley, ASTATE CoNHP, who distributed the email to students enrolled in undergraduate nursing degree programs at both universities. It was my

belief that utilizing faculty might improve response rates among student populations (Nulty, 2008).

The initial email participant letter was a critical component to the success of this research study. The email letter described the purpose of the study and potential benefits that might result from this study and provided informed consent information that explained the rights of the participant. The letter also described how participation would help to develop a knowledge base for future research and may help nursing students, faculty, healthcare, and emergency management organizations better understand nursing students' responses to disasters. The letter assured students that participation was voluntary and in no way would affect them in their courses. The letter included a hotlink to the online survey along with complete and specific instructions for accessing and completing the online survey. Once students accessed the link to the survey, the first page displayed informed consent information. The survey required participants to select 'yes' to agree to the informed consent agreement prior to accessing the survey questions. Participants who did not agree were unable to access the survey questions. Those who selected 'no' to the informed consent form received a message thanking them for their time. Students were able to decline to participate at any time before completing and submitting the survey by simply exiting the survey program.

I used the following best practices identified by other researchers (Dillman et al., 2014; Nulty, 2008) to increase the response rate to the survey.

- Provided a cover letter email that explains the research study and survey along with clear instructions for completing the survey.
- Enlisted the help of university faculty to distribute the letter to the study population and promote participation.
- Specifically asked for help from the nursing student in the initial email letter and follow up emails.

- Clearly articulated the importance of the participant's contribution to the success of this study. Explained how their participation contributed to a greater understanding of disaster readiness among nursing student.
- Provided a telephone number and email address so participants can ask questions.
- Included statements of appreciation in the cover letter email and each of the follow up emails.
- Informed the study population about their unique qualifications to participate in this study as nursing students.
- Informed the study population that I had invited nursing students from only two universities to participate in this study. Informing students that another university was also participating may provide social validation among potential participants. In addition, participants might perceive a sense of exclusivity since I had invited student at only two university to assist with the research study.
- Made it easy for students to access the online survey by providing the URL as a hotlink in the cover email letter. Participants received the link to the survey in the initial email letter and in each follow up email letter.
- Provided reminders following the initial survey email. Avoided sending too many reminders, which could have irritated respondents and reduced their willingness to participate in the study. I sent reminders two weeks, four weeks, and five weeks after the initial email letter.
- Ensured the survey was worthy of the student's time by creating an engaging survey on a topic salient to the study population.
- Kept the questionnaire as brief as possible and provided the expected time required to complete the survey in the cover letter.

- Ensured the survey was available for an extended duration. I made the survey available for six weeks.
- Assured students of the anonymity of their responses and explained how information would remain confidential. The cover letter and follow up letters explained that the survey instrument did not collect any personally identifiable information and that all information would be stored in a secure manner in keeping with IRB requirements.

Data Analysis Procedures

Following the six-week survey period, the researcher imported the data from SurveyMonkey™ into SPSS Version 22 (SPSS Inc., Chicago, Illinois USA). Once imported, data analysis occurred in three phases; phase one, data inspection; phase two, data description; and phase three, data analysis. Phase One consisted of a review of all collected data to assess possible areas of concern, such as missing data. Phase Two provided descriptive statistics for each variable independently. Descriptive statistics included the frequency distribution, measure of central tendency, measure of variance for interval data, and Cronbach's alpha for Likert items. The measure of central tendency included the mode for nominal data; the mode and median for ordinal data; and the mode, median, and mean for interval level data (Frankfort-Nachmias et al., 2014). Additionally, the standard deviation provided the measure of variance for interval level data. The standard deviation utilizes the mean value; therefore, it is only appropriate for interval level data (Frankfort-Nachmias et al., 2014). Phase Three, data analysis, utilized inferential statistics to identify relationships among paired variables and test hypotheses. Inferential statistics allows researchers to draw conclusions and make predictions about a population based on data from a sample of the population (Frankfort-Nachmias et al., 2014).

During each phase, I used descriptive and inferential statistics processes detailed by Pallant (2013) and Field (2014) to examine data. When appropriate, analysis utilized bootstrapping (1,000 sample) to mitigate issues with non-normal distribution of the DV, overall

willingness score. Bootstrapping is a technique that uses the study's sample data as a population. SPSS repeatedly pulls and replaces data from random samples from the data (Field, 2013). Bootstrapping provided 95% bias-corrected and accelerated (BCa) confidence intervals with upper and lower coefficient boundaries (Field, 2013). Chapter 4 provides analysis results including bootstrapped confidence intervals.

Phase One, Data Inspection

During Phase One, I examined the data to identify missing information and verify that respondents answered each item in the correct format. SPSS allowed me to assign a numerical identifier to the categories of each nominal variable and the levels of ordinal variables. For 'Yes'/'No' responses, I assigned values as 'Yes' = 1, 'No' = 0. I assigned values to the responses to questions pertaining to tasks, nursing motivators, barriers, student specific barriers, and enablers with 'Yes'=3, 'Not Sure' = 2, and 'No' = 1. For the ten specific disaster scenarios, I assigned identifiers of 'Willing'=3, 'Not Sure'=2, and 'Not Willing'=1. The numerical identifier did not provide any type of mathematical value. The ordinal responses of Likert items ranged from 1 to 5 with 5 assigned to the highest response level (e.g. 1-completely disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-completely agree). Appendix 9 provides the complete codebook for the quantitative data in the present study. Table 3.5 identifies the level of measurement for each variable. Additionally, I organized and categorized responses to the open-ended questions to contextualize the statistical data.

Table 3.5

Variables and Level of Measurements

Variables	Level of Measurement
Willingness to respond - natural disasters	Ordinal
Willingness to respond – human-caused disasters	Ordinal
Willingness level of agreement – natural disasters	Ordinal
Willingness level of agreement – human-caused disasters	Ordinal
Task – feed patients	Nominal
Task – serve refreshment to staff	Nominal
Task – provide childcare for hospital workers	Nominal
Task – provide clinical support	Nominal
Task – provide clinical care	Nominal
Task – provide emotional support	Nominal
Task - administrative support	Nominal
Task - whatever tasks need to be done	Nominal
Moral obligation	Ordinal
Nursing motivation - have a calling	Nominal
Nursing motivation - help people cope with illness	Nominal
Nursing motivation - help people	Nominal
Nursing motivation - gives my life meaning	Nominal
Nursing motivation - work in a caring occupation	Nominal
Nursing motivation - advance in the field of healthcare	Nominal
Nursing motivation - offers job security	Nominal
Nursing motivation - interested in science	Nominal
Nursing motivation - job flexibility	Nominal
Nursing motivation – finish school quickly	Nominal
Nursing motivation - earn a good salary	Nominal
Encouraged to volunteer	Ordinal
Currently preregistered volunteer	Nominal (dichotomous)
Barrier - fear for my personal safety and well-being	Nominal
Barrier - fear for the safety and well-being of my family members	Nominal
Barrier - responsibility for dependent children	Nominal
Barrier - type of disaster	Nominal
Barrier - lack of disaster training and education	Nominal
Barrier - being a student	Nominal
Concern for self	Ordinal
Concern for family	Ordinal
Dependent children in household	Nominal (dichotomous)
Number of dependent children	Nominal
Age(s) of dependent children	Nominal
Sole guardian	Nominal
Current childcare	Nominal

Childcare difficulty during disaster	Ordinal
Attended disaster related training	Nominal (dichotomous)
Number of disaster courses taken	Nominal
Disaster curriculum included in nursing program	Nominal (dichotomous)
Disaster type - earthquake	Nominal
Disaster type - winter storm	Nominal
Disaster type – tornado	Nominal
Disaster type - flood	Nominal
Disaster type - mass casualty incident	Nominal
Disaster type - influenza pandemic	Nominal
Disaster type - infectious disease outbreak	Nominal
Disaster type - biological terrorist incident	Nominal
Disaster type - chemical terrorist incident	Nominal
Disaster type - radiologic terrorist incident	Nominal
Student specific barrier – heavy course load	Nominal
Student specific barrier – don't know enough to help	Nominal
Student specific barrier – not yet licensed	Nominal
Student specific barrier – not insured liability	Nominal
Student specific barrier – part or full time job	Nominal
Enabler – vaccines and prophylaxis available to me	Nominal
Enabler – provided with appropriate PPE	Nominal
Enabler – vaccines and prophylaxis provided to family	Nominal
Enabler - knew I would be safe	Nominal
Enabler –knew family would be safe	Nominal
Enabler –more knowledge about disaster response	Nominal
Enabler - access to safe reliable childcare	Nominal
Enabler - access to safe reliable pet care	Nominal
University	Nominal (dichotomous)
Degree program	Nominal (dichotomous)
Licensure	Nominal (dichotomous)
Length of licensure	Nominal
Employment status	Nominal (dichotomous)
Marital Status	Nominal
Gender	Nominal (dichotomous)
Race	Nominal
Age	Ratio

Phase Two, Data Description

Description of the data collected began with univariate analysis of each variable. Univariate analysis is a descriptive statistical process used to describe and summarize each variable independently. For all variables, I obtained statistics such as central tendency and

frequency distribution of nominal and ordinal variables as well as the central tendency, variability, and distribution of interval variables. For nominal variables, the mode provided the central tendency. Median and interquartile range provided the central tendency and distribution of ordinal variables and the mean and standard deviation provided the details for interval level variables. For skewed interval data, the median provided the measure of central tendency and interquartile range provided the distribution. The mean is not an appropriate measure of central tendency for positively or negatively skewed data (Frankfort-Nachmias et al., 2014). The median is a more appropriate statistic because it is typically not affected by skewed distribution or outliers (Field, 2013).

Data transformation.

During Phase Two, I transformed specific variables to allow for comprehensive statistical testing. First, I created an interval dependent variable, *overall willingness score*, by adding the numerical rank values of each participant's responses to the four willingness measures. The overall willingness score ranged from four to 20. Researchers have used this process in previous studies examining the willingness of registered nurses to respond to disasters (Grimes & Mendias, 2010; Veenema, Walden, Feinstein, & Williams, 2008). An individual's willingness to respond may be different for a natural disaster and human-caused disaster; therefore, it was important to measure these constructs independently while also using a separate measure to determine the level of overall willingness to respond to disasters.

Statistical tests using the interval DV, *overall willingness score*, required the transformation of nominal variables, with more than two categories, into dichotomous variables. Dichotomous variables are appropriate when assessing the relationship between a nominal IV and an interval DV (Field, 2013; Pallant, 2013). Additionally, many of the nominal variables had categories with cell values less than five. Small cell values may be an issue during certain statistical tests (Field, 2013; Pallant, 2013). To create the dichotomous variables, I consolidated responses of 'No' and 'Not sure' into a single 'No' category for the items within tasks,

nursing profession motivators, barriers, student specific barriers, and enablers. I also consolidated responses 'Not willing to volunteer' and 'Not sure' to the ten specific disaster types into a single category, 'Not willing'. For some nominal variables, dichotomizing the responses may help normalize the distribution of data.

Phase Three, Data Analysis

Bivariate analysis.

Prior to testing the research hypotheses, I conducted bootstrapped (1,000 samples) correlation analysis between the DV and each IV to ensure a complete understanding of the interactions among all the variables. Correlation analysis also examined associations among paired IVs. As described previously, bootstrapping is a method used to reduce the effects of non-normal distribution of variables by using the sample data as a population. SPSS conducted bootstrapped analysis by pulling random samples from the existing data 1,000 times, replacing each sample prior to pulling the next sample (Field, 2013).

I used bootstrapped point-biserial correlation test to examine relationships between the DV and each dichotomous IVs and Kendall's tau correlation test to identify correlations between the DV and each ordinal IV. Point-biserial correlation is a type of Pearson's r correlation test used to examine relationships between an interval DV and a dichotomous IV (Field, 2013; Pallant, 2013). Kendall's tau is a nonparametric correlation test that examines the relationship between an ordinal IV and an interval DV with a small range of scores with tied ranks (Field, 2013). The small range of the DV scores (8 to 20) resulted in many scores assigned the same rank. I also used bootstrapping (sample 1,000) in all correlation tests to correct for the non-normal distribution of the DV. Chapter 4 provides the results of the correlation analysis.

Multiple regression analysis.

The final stage of analysis before testing the research hypotheses focused on identifying the IVs that best predicted overall willingness score. I conducted bootstrapped (1,000 samples) multiple linear regression to assess how well groups of IVs predicted *overall willingness score*.

Specifically, my goal was to identify a model that utilized the fewest number of variables to predict *overall willingness score*.

Depending on the number of correlations found between the IVs and the DV, I must determine the appropriate number of IVs to include in multiple regression analysis. Generalizability becomes an issue when conducting multivariate regression with a large number of IVs (Pallant, 2013). The combined effect of many IVs on a DV within a small or medium sample size may negate the scientific value of the result because the results are not duplicable in other studies among different samples (Field, 2013; Pallant, 2013). A common rule used in social science research stipulates the need to have 10 to 15 cases for each IV (Field, 2013).

The study's sample size (n=110) determined the number of IVs used in multiple regression analysis. I reverse calculated the appropriate number of IVs using the sample size determinant equation $N > 50 + 8(m)$, where m is the number of IVs (Pallant, 2013). Based on the study sample size, I determined that no more than seven IVs should be included in multiple regression analysis ($50 + 8 (7) = 106$).

Hypothesis testing.

I used descriptive statistics as well as bootstrapped point-biserial correlation (r_{pb}) and Kendall's tau (τ) correlation tests to test the research hypotheses. Table 3.6 identifies the specific test and IV(s) used to test each hypothesis.

Table 3.6

Hypotheses, Independent Variables, and Methods Used to Test Hypotheses.

Hypothesis	IV	Test
$H1_a$ - Nursing students with dependent children will be less willing to respond to a disaster than those with no dependent children.	Dependent children in household	Point-biserial correlation

$H2_a$ - Concern for self will reduce willingness of nursing students to respond to disasters.	Level of concern for personal safety	Kendall's tau correlation
	Barrier-personal safety and well-being	Point-biserial correlation
$H3_a$ - Concern for family/loved ones will reduce willingness of nursing students to respond to disasters.	Level of concern for family safety	Kendall's tau correlation
	Barrier-personal safety and well-being	Point-biserial correlation
$H4_a$ - Nursing students who receive disaster training will be more willing to respond to a disaster than nursing students who receive no disaster training.	Attended disaster training	Point-biserial correlation Mann-Whitney U Test
	Disaster curricula required in degree programs	Point-biserial correlation
$H5_a$ - Being a college student will reduce willingness of nursing student to respond to disasters.	Barrier-being a nursing student	Point-biserial correlation
	Student specific barriers	Point-biserial correlation
$H6_a$ - Nursing student will be more willing to respond to natural disasters and less willing to respond to human-caused disasters.	Willingness to respond	Descriptive statistics
	Barrier-type of disasters	Point-biserial correlation
	Specific types of disasters	Point-biserial correlation

Reliability and Validity

The success of a quantitative survey research study depends on the reliability and validity of survey instrument (Fink & Litwin, 1995). A valid survey item creates a clear depiction of the item it examines, whereas a reliable survey item provides consistent measurements each time it is used. For the present study, the research used guidance provided by Fink and Litwin (1995) to assess effectiveness and appropriateness of the measurements that link theoretical concepts to realistic indicators (Carmines & Zeller, 1979).

Reliability

Reliability refers to the consistency of measurements within a questionnaire to quantity a concept (Drost, 2011). I adapted questions from previous research on willingness to respond among healthcare workers and student nurses to create the questions for the present study. Minimal modifications of the questions were necessary to ensure the measures fit the current study population. One factor that affects reliability of a survey is the fit of the questions to the study population (Brown, 1997). The survey instrument may not have been effective had the questions not adequately fit the study population (Frankfort-Nachmias et al., 2014). Previous researchers established the reliability of their survey questions in their studies (Adams & Berry, 2012; Burke et al., 2010; Cone & Cummings, 2006; Gershon et al., 2010; Ogedegbe et al., 2012; Qureshi et al., 2005; Rosychuk et al., 2008; Schmidt et al., 2011; Whetzel et al., 2013; Yonge et al., 2010).

I assessed the reliability of survey measures by examining the internal consistency among related measures. Internal consistency reliability refers to the extent to which different items in a survey to measure the same concept (Frankfort-Nachmias et al., 2014; Fink & Litwin, 1995). The survey contained four Likert-items that measured the concept, *willingness to respond*. The two subparts of Question 1 measured respondent's willingness to respond. The two subparts of question 2 measured the level of agreement to a statement about willingness to respond. The survey also measured willingness to respond to ten specific disaster scenarios. Responses to the ten scenarios included 'Yes', 'Not Sure' and 'No'. I used Cronbach's Alpha test to assess the internal consistency of the four willingness measures.

Validity

Validity of the measurements used in a survey is critical in quantitative research. Measurement is the process of connecting a theoretical concept to a realistic indicator (Carmines & Zeller, 1979). In survey research, validity refers to the extent a survey question measures a

researcher's definition of a concept or phenomenon (Drost, 2011). Threats to validity occur when researchers use inadequate definitions and indicators to measure a theoretical concept (Creswell, 2014). The phenomenon of interest in the present study was willingness to respond to disasters.

I used content validity to assess the validity of the survey instrument. Researchers use content validity to determine the effectiveness and appropriateness of survey items to measure a specific concept (Frankfort-Nachmias et al., 2014). As detailed previously, I conducted an extensive review of existing literature on willingness to respond. The previous studies provided a theoretical definition for the phenomenon, willingness to respond. Chapter 2 provided a review of the literature. I used the theoretical definition and previous studies to develop the survey items measuring the concept, willingness to respond.

After creating the questionnaire, I engaged a panel of content experts to review survey instrument (Drost, 2011; Frankfort-Nachmias et al., 2014). The panel consisted of three nursing professors, two registered nurses, and one fire and emergency services college professor. I selected each individual based on his or her unique knowledge of healthcare, nursing and nursing academia, and disaster research. One panel member authored a study reviewed in Chapter 2 and was uniquely qualified to provide content validity of the present study (Young & Persell, 2004). Each panel member reviewed the questionnaire to assess the extent to which the survey items represented my definition of the phenomenon, willingness to respond. Additionally, the panel assessed the survey's usability, clarity and readability (Johnson & Reynolds, 2011). I incorporated relevant feedback from the panel members relating to usability, clarity of instructions, and readability into the final survey instrument.

Summary

Chapter 3 provided a description of the research design and methodology that guided the development and execution of the present quantitative cross-sectional study. The study population

consisted of student nurses enrolled in baccalaureate level nursing degree programs at two universities in Utah and Arkansas in the Spring 2016 semester. I gathered data through an online survey and analyzed the data using SPSS statistical software. Univariate, bivariate and multivariate analysis detailed the relationships and interactions between the DV and each of the IVs.

CHAPTER IV

ANALYSIS AND FINDINGS

Introduction

The goal of this quantitative cross-sectional study was to gain an understanding of the willingness of nursing students enrolled in baccalaureate degree programs at two universities to respond to disasters and examine factors that affect their willingness to respond. I collected and analyzed survey data in order to understand the attitudes and beliefs of nursing students relating to disaster response and to answer the study's research questions and assess related hypotheses. Univariate analysis provided descriptive statistical information about each variable. Inferential statistics, both bivariate and multivariate analysis, examined relationships between the dependent variable (DV) and all independent variables (IVs) as well as between paired IVs, allowing me to gain valuable insight beyond the study hypotheses. I established a confidence level of 95% and significance level of $p < .05$ in all inferential statistical analysis.

Research Questions

The present study included three research questions and six hypotheses. The remainder of this chapter describes the results of statistical analysis beginning with univariate analysis of all variables, followed by bivariate analysis, and finally hypothesis testing.

1. To what extent do nursing students perceive themselves as being willing to respond to disasters?
2. What factors affect the willingness of nursing student to respond to disasters?

   $H1_0$ - There will be no statistically significant relationship between the presence or lack of dependent children in their household and the willingness of student nurses to respond to a disaster.

   $H1_a$ - Nursing students with dependent children will be less willing to respond to a disaster than those with no dependent children

   $H2_0$ - There will be no statistically significant relationship between the level of concern for self and the willingness of student nurses to respond to a disaster.

   $H2_a$ - Concern for self will reduce willingness of nursing students to respond to disasters.

   $H3_0$ - There will be no statistically significant relationship between the level of concern for family and the willingness of student nurses to respond to a disaster.

   $H3_a$ - Concern for family/loved ones will reduce willingness of nursing students to respond to disasters.

   $H4_0$ - There will be no statistically significant relationship between disaster education and the willingness of student nurses to respond to a disaster.

$H4_a$ - Nursing students who receive disaster training will be more willing to respond to a disaster than nursing students who receive no disaster training.

$H5_0$ - There will be no statistically significant relationship between being a college student and the willingness of nursing students to respond to a disaster.

$H5_a$ - Being a college student will reduce willingness of nursing student to respond to disasters.

3. To which type of disasters are nursing students most willing to respond?

   $H6_0$ - There will be no statistically significant relationship between disaster type (natural and human-caused) and the willingness of student nurses to respond to a disaster.

   $H6_a$ - Nursing student will be more willing to respond to natural disasters and less willing to respond to human-caused disasters.

Data Description

The following section describes the univariate analysis of each variable investigated in this study. The details begin with the variables used to create the DV, *overall willingness score*, followed by the IVs.

Dependent Variable – Overall Willingness Score

The DV, *overall willingness score*, is a composite variable created by summing participant's responses to the four measures of willingness. Prior to creating the DV, I used Cronbach's Alpha to test the internal consistency reliability among the four willingness measures. Cronbach's alpha (Cronbach's α) is a statistical test that reflects the level of consistency of different items measuring the same construct (Fink & Litwin, 1995). First, I assessed the reliability between the two natural disaster willingness measures. The Cronbach's α score

between the two measures was 0.90. A Cronbach's α value greater than 0.70 is acceptable in social science research (Field, 2013; Pallant, 2013). I also assessed the reliability between the two human-caused disaster willingness measures, which resulted in a Cronbach's α of 0.88. Finally, I assessed the reliability among all four willingness measures. Cronbach's α found a high level of reliability among the four measures of willingness to respond (α = 0.88).

Descriptive statistics of the four measures of willingness found more than half the participants completely willing to respond to support a healthcare or disaster response organization during a natural disaster (64.5%, n = 71) with no respondents not at all willing to respond and only 1.8% (n = 2) somewhat unwilling. Fewer participants were completely willing to respond to support a healthcare or disaster response organization during a human-caused disaster (45.5%, n = 50) with only 6.4% (n = 7) either somewhat unwilling (5.5%, n = 6) or completely unwilling (0.9%, n = 1). More respondents were uncertain about whether they were willing or unwilling to respond to a human-caused disaster (13.6%, n = 15) than a natural disaster (5.35%, n = 6). The median and interquartile range provided the central tendency and spread of the ordinal variables. The mean and standard deviation are not appropriate for ordinal level variables (Field, 2013; Pallant, 2013). Table 4.1 details the responses to question 1a 'willingness to respond to a natural disaster' and question 1b 'willingness to respond to a human-caused disaster'.

Table 4.1

Summary of Responses for Willingness to Respond to Natural and Human-Caused Disasters

Level of willingness	Natural disaster n (%)		Human-caused disaster n (%)	
Completely willing to respond-5	71	(64.5%)	50	(45.5%)
Somewhat willing to respond-4	31	(28.2%)	38	(34.5%)
Uncertain-3	6	(5.5%)	5	(13.6%)
Somewhat unwilling to respond-2	2	(1.8%)	6	(5.5%)
Not at all willing to respond-1	0	(0.0%)	1	(0.9%)

Median	5.00	4.00
Interquartile range	1.00	1.00
Percentile 25	4.00	4.00
50	5.00	4.00
75	5.00	5.00
Skewness	-1.60	-1.07
Skewness Std Error	0.230	0.230
Kurtosis	2.454	0.669
Kurtosis Std Error	0.457	0.457

I dichotomized the Likert responses for each question into two categories, 'Willing' and 'Not willing' for use in multivariate analysis. The responses were dichotomized by consolidating responses of '4-Somewhat willing' and '5-Completely willing' into the category 'Willing' and all other responses into 'Not willing'. Table 4.2 summarizes the dichotomized variables.

Table 4.2

Summary of Dichotomized Responses for Willingness to Respond to Natural and Human-Caused Disasters

Level of willingness	Natural disaster n (%)	Human-caused disaster n (%)
Willing	102 (92.7%)	88 (80.0%)
Not willing	8 (7.3%)	22 (20.0%)

Participants responded similarly to questions 2a and 2b, which measured their level of agreement to statements about willingness to respond to a natural disaster and human-caused disaster. More participants (14.5%, n = 16) reported a strong level of agreement to the statement "I am willing to provide support to a healthcare or disaster response organization during a natural disaster" (71.8%, n = 79) compared to the statement "I am willing to provide support to a healthcare or disaster response organization during a human-caused disaster" (57.3%, n = 63). As before, the median and interquartile range provided the central tendency and dispersion of the ordinal variable. Table 4.3 provides the self-reported level of agreement to willingness statements for natural and human-caused disasters.

Table 4.3

Summary of Responses for Level of Agreement Statement of Willingness to Respond to Natural and Human-Caused Disasters

Level of agreement	Natural disaster n (%)		Human-caused disaster n (%)	
Strongly agree-5	79	(71.8%)	63	(57.3%)
Somewhat agree-4	25	(22.7%)	29	(26.4%)
Neither agree nor disagree-3	4	(3.6%)	12	(10.9%)
Somewhat disagree-2	2	(1.8%)	6	(5.5%)
Strongly disagree-1	0	(0.0%)	0	(0.0%)
Median		5.00		5.00
Interquartile range		1.00		1.00
Percentile 25		4.00		4.00
50		5.00		5.00
75		5.00		5.00
Skewness		-2.03		-1.25
Skewness Std Error		0.23		0.23
Kurtosis		4.42		0.67
Kurtosis Std Error		0.46		0.46

I created the dependent variable, *overall willingness score*, by calculating the sum of the responses to the four measures of willingness in the survey questionnaire, questions 1a, 1b, 2a, and 2b. Almost half of the respondents (48.2%, n = 53) had overall willingness scores greater than the median score of 18.0. The standard deviation was 2.72; however, the standard deviation did not provide useful information since the scores were asymmetrical (Pallant, 2013). Nonparametric descriptive statistics of the median and interquartile range are appropriate for skewed continuous data (Field, 2013; Frankfort-Nachmias et al., 2014; Pallant, 2013). Table 4.4 provides the descriptive statistics for the dependent variable, *overall willingness score*.

Table 4.4

Summary of Descriptive Statistics of Overall Willingness Score

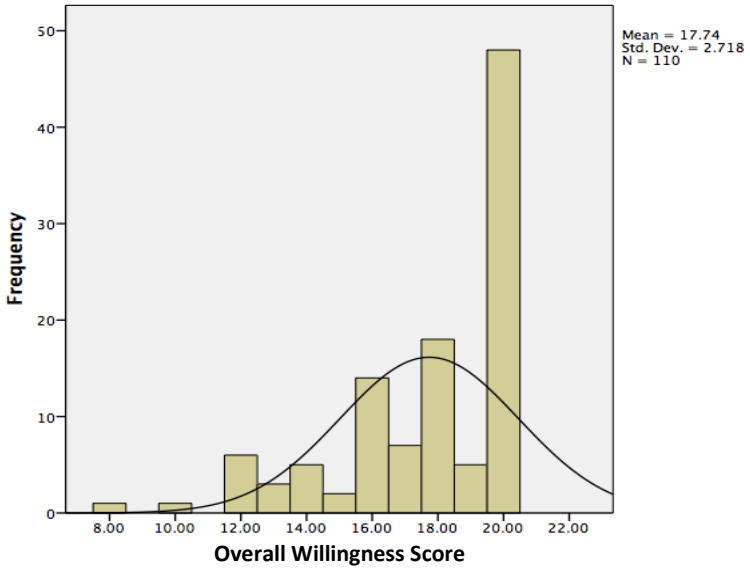
Statistics		Values	95% BCa CI
Mean		17.74	[17.23, 18.16]
Median		18.00	[18.00, 20.00]
Mode		20.00	
Variance		7.40	[5.36, 9.69]
Standard deviation		2.72	[2.32, 3.10]
Skewness		-1.23	[-1.80, -0.75]
Std. Error of Skewness		0.23	
Kurtosis		1.01	[-0.35, 2.30]
Std. Error of Kurtosis		0.46	
Range		12.00	
Interquartile range		4.00	
Percentile	25	16.00	
	50	18.00	
	75	20.00	
Frequency		Count	Percentage
8.00		1	0.9%
10.00		1	0.9%
12.00		6	5.5%
13.00		3	2.7%
14.00		5	4.5%
15.00		2	1.8%
16.00		14	12.7%
17.00		7	6.4%
18.00		18	16.4%
19.00		5	4.5%
20.00		48	43.6%

I assessed the normality of the distribution of the DV, *overall willingness score*. Descriptive statistics provided skewness and kurtosis values for the DV. The skewness and kurtosis values of normally distributed scores are close to zero (Tabachnick & Fidell, 2013). Analysis indicated the DV, *overall willingness score*, was not normally distributed (skewness = -1.23, kurtosis = 1.01). I further assessed the distribution of the DV, *overall willingness score*, using the Kolmogorov-Smirnov Test. The test found the distribution of the DV deviated

significantly from normal, D (110) = 0.234, $p < .001$. Figure 4.1 illustrates the distribution of the DV, *overall willingness score*.

Figure 4.1

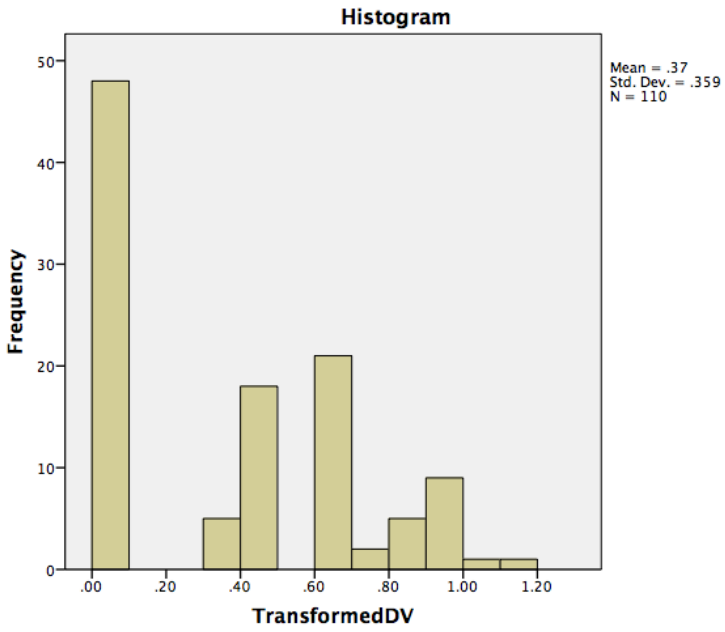
Histogram of Dependent Variable, Overall Willingness Score



I attempted to correct the non-normal distribution by transforming the variable using reflect and logarithm transformation. Reflect and logarithm transformation may correct negatively skewed data (Field, 2013; Pallant, 2013); however, the procedure did not correct the non-normal distribution of the DV. Figure 4.2 displays a histogram showing the distribution of the transformed DV.

Figure 4.2

Histogram of Reflect and Logarithm of Transformed Dependent Variable, Overall Willingness Score



Since the transformation did not normalize the distribution of the DV, bivariate and multivariate analyses used the original DV. I decided to utilize the untransformed DV and determined the use of non-parametric tests might be necessary for bivariate and multivariate analysis involving the DV, *overall willingness score*. I further decided to use bootstrapping procedures with 1,000 samples to assess the relationships between the DV, *overall willingness score*, and the IVs, when appropriate. As described in Chapter 3, bootstrapping is a robust testing method used when data violates the normality assumption (Field, 2013).

Independent Variables

The following section summarizes each of the IVs. For the nominal variables; barriers, enablers, tasks, motivators, disaster types, nursing motivators, and student barriers, I summarized the original categorical responses as well as the dichotomized responses.

Barriers.

Participants indicated fear for their family's safety (73.6%, n = 81) would reduce their willingness to respond more than any other barrier. More than half the respondents indicated a lack of disaster training (56.4%, n = 62) and fear for personal safety (50.9%, n = 56) would also reduce their willingness to respond to a disaster. A majority of participants (71.8%, n = 79) indicated that being a student would not prevent them from responding to a disaster. The barriers did not delineate between natural disasters and human-caused disasters. Table 4.5 summarizes the responses collected for each barrier. Table 4.6 provides the dichotomized responses for each barrier.

Table 4.5

Summary of Responses to Barriers to Responding

Barriers to responding	Yes		Not Sure		No	
Fear for my personal safety and well-being	56	(50.9%)	14	(12.7%)	40	(36.4%)
Fear for the safety and well-being of my family members	81	(73.6%)	14	(12.7%)	15	(13.6%)
Responsibility for dependent children	41	(37.3%)	9	(8.2%)	60	(54.5%)
Type of disaster	49	(44.5%)	9	(8.2%)	52	(47.3%)
Lack of disaster training and education	62	(56.4%)	15	(13.6%)	33	(30.0%)
Being a nursing student	25	(22.7%)	6	(5.5%)	79	(71.8%)

Table 4.6

Summary of Dichotomized Responses to Barriers to Responding

Barriers to responding	Yes		No	
Fear for my personal safety and well-being	56	(50.9%)	54	(49.1%)
Fear for the safety and well-being of my family members	81	(73.6%)	29	(26.4%)
Responsibility for dependent children	41	(37.3%)	69	(62.7%)
Type of disaster	49	(44.5%)	61	(55.5%)
Lack of disaster training and education	62	(56.4%)	48	(43.6%)
Being a nursing student	25	(22.7%)	85	(77.3%)

Respondents provided the following comments regarding other barriers that might prevent them from responding to a disaster.

> *"I'm not sure if the communication needed would be adequate to help me know where to go or what to do."*
> *"Legal problems, if I'm not covered by good Samaritan laws"*
> *"Not being registered to help/knowing how to get involved."*
> *"Transportation/accessibility. Lack of good management at disaster site."*

Enablers.

The responses provided in Table 4.7 indicate measures to ensure personal safety and family safety, such as vaccinations for self (96.4%, n = 106) and family (90.9%, n = 100) and being provided the correct personal protective equipment (98.2%, n = 108) was positively correlated to a respondent's willingness to respond. Additionally, respondents believed additional knowledge would increase their willingness (96.4%, n = 106) as well as knowing their family was safe (96.4%, n = 106). Table 4.8 summarizes the dichotomized responses.

Table 4.7

Summary of Responses to Enablers of Responding

Enablers to responding	Yes	Not Sure	No
If vaccines and prophylaxis were available to me.	106 (96.4%)	2 (1.8%)	2 (1.8%)
If I were provided with appropriate personal protective equipment (PPE).	108 (98.2%)	0 (0.0%)	2 (1.8%)
If vaccines and prophylaxis were provided to my family members.	100 (90.9%)	5 (4.5%)	5 (4.5%)
If I knew I would be safe from illness or harm.	104 (94.5%)	0 (0.0%)	6 (5.5%)
If I knew my family would be safe.	106 (96.4%)	1 (0.9%)	3 (2.7%)
If I had more knowledge about disaster response.	106 (96.4%)	0 (0.0%)	4 (3.6%)
If I had access to safe reliable childcare.	63 (57.3%)	10 (9.1%)	37 (33.6%)
If I had access to safe reliable pet care.	63 (57.3%)	5 (4.5%)	42 (38.2%)

Table 4.8

Summary of Dichotomized Responses to Enablers of Responding

Enablers to responding	Yes	No
If vaccines and prophylaxis were available to me.	106 (96.4%)	4 (3.6%)
If I were provided with appropriate personal protective equipment (PPE).	108 (98.2%)	2 (1.8%)
If vaccines and prophylaxis were provided to my family members.	100 (90.9%)	10 (9.1%)
If I knew I would be safe from illness or harm.	104 (94.5%)	6 (5.5%)
If I knew my family would be safe.	106 (96.4%)	4 (3.6%)
If I had more knowledge about disaster response.	106 (96.4%)	4 (3.6%)
If I had access to safe reliable childcare.	63 (57.3%)	47 (42.7%)
If I had access to safe reliable pet care.	63 (57.3%)	47 (42.7%)

Two respondents provided additional information about what they believed might increase their willingness to respond.

> *"Ability to get to and from disaster site."*
> *"If I had access to safe transportation (i.e. Winter storm)."*

Tasks.

Analysis of the IV, *tasks willing to perform during response*, found a majority of respondents were willing to perform all of the identified activities during a disaster. Respondents were most willing to provide basic clinical support (e.g., taking vital signs) (98.2%, n = 108) and feed patients (94.5%, n = 104). Fewer respondents were willing to provide childcare for hospital workers (85.5%, n = 94) and administrative support (80.0%, n = 88). Table 4.9 details the reported willingness to perform identified tasks in response to a disaster and Table 4.10 provides the dichotomized responses.

Table 4.9

Summary of Responses for Willingness to Perform Specific Tasks

Tasks	Yes		Not Sure		No	
Feed patient	104	(94.5%)	6	(5.5%)	0	(0.0%)
Serve refreshments to staff	98	(89.1%)	4	(3.6%)	8	(7.3%)
Provide childcare for hospital workers	94	(85.5%)	7	(6.4%)	9	(8.2%)
Basic clinical support	108	(98.2%)	2	(1.8%)	0	(0.0%)
Clinical care	101	(91.8%)	6	(5.5%)	3	(5.5%)
Provide emotional support	100	(90.9%)	7	(6.4%)	3	(2.7%)
Answer telephones or other administrative support	88	(80.0%)	11	(10.0%)	11	(10.0%)
Whatever tasks need to be done	94	(85.5%)	3	(5.5%)	13	(11.8%)

Table 4.10

Summary of Dichotomized Responses for Willingness to Perform Specific Tasks

Tasks	Yes		No	
Feed patient	104	(94.5%)	6	(5.5%)
Serve refreshments to staff	98	(89.1%)	12	(10.9%)
Provide childcare for hospital workers	94	(85.5%)	16	(14.5%)
Basic clinical support	108	(98.2%)	2	(1.8%)
Clinical care	101	(91.8%)	9	(8.2%)
Provide emotional support	100	(90.9%)	10	(9.1%)
Answer telephones or other administrative support	88	(80.0%)	22	(20.0%)
Whatever tasks need to be done	94	(85.5%)	16	(14.5%)

The survey provided an 'other' space to allow respondents to provide additional comments. One participant commented,

> *"I feel like the non-nursing skills would best be left to lay volunteers. If there were a desperate need for them, I would do them. But I would prefer to make more effective use of my nursing training".*

Six respondents provided comments indicating they were willing to do anything that needed to be done,

> "A*ny task that needed to be done."*
> *"Anything I can."*
> *"Anything to be helpful."*
> *"Assisting in anything that needs to be done to take care of the situation*

at hand."

"I would personally be willing to assist with whatever needed to be done."

"Nothing is too low when we are trying to work as a team."

"*As long as it needs to be done and is the best use of my time and talents, I am willing.*"

Motivation to enter nursing profession.

Factors such as, desire to help people (98.2%, n = 108) and help others cope with illness (96.4%, n = 106) were strong motivators for respondents to enter the nursing profession. Table 4.11 provides the responses for the eleven motivational factors included in this study and 4.12 provides the dichotomized responses.

Table 4.11

Summary of Responses for Factors that Motivated Entry into Nursing Profession

Nursing Motivators	Yes		Not Sure		No	
Have a calling	68	(61.8%)	19	(17.3%)	23	(20.9%)
Help others cope with illness	106	(96.4%)	1	(0.9%)	3	(2.7%)
Help people	108	(98.2%)	0	(0.0%)	2	(1.8%)
Gives my life a sense of meaning	87	(79.1%)	10	(9.1%)	13	(11.8%)
Work in a caring occupation	99	(90.0%)	4	(3.6%)	7	(6.4%)
Advance in the field of healthcare	86	(78.2%)	16	(14.5%)	8	(7.3%)
Occupation offers job security	99	(90.0%)	2	(1.8%)	9	(8.2%)
Interested in science	94	(85.5%)	5	(4.5%)	11	(10.0%)
Occupation offers job flexibility	90	(81.8%)	9	(8.2%)	11	(10.0%)
Finish schooling quickly	32	(29.1%)	10	(9.1%)	68	(61.8%)
Earn a good salary	74	(67.3%)	13	(11.8%)	23	(20.9%)

Table 4.12

Summary of Dichotomized Responses for Factors that Motivated Entry into Nursing Profession

Nursing Motivators	Yes		No	
Have a calling	68	(61.8%)	42	(38.2%)
Help others cope with illness	106	(96.4%)	4	(3.6%)
Help people	108	(98.2%)	2	(1.8%)
Gives my life a sense of meaning	87	(79.1%)	23	(20.9%)
Work in a caring occupation	99	(90.0%)	11	(10.0%)
Advance in the field of healthcare	86	(78.2%)	24	(21.8%)
Occupation offers job security	99	(90.0%)	11	(10.0%)
Interested in science	94	(85.5%)	16	(14.5%)
Occupation offers job flexibility	90	(81.8%)	20	(18.2%)
Finish schooling quickly	32	(29.1%)	78	(70.9%)
Earn a good salary	74	(67.3%)	36	(32.7%)

Additional comments regarding things that influenced respondents into the nursing profession included the following statements.

> *"Being able to move up, getting advanced degrees if desired"*
> *"Blood doesn't bother me"*
> *"Family members"*
> *"Health is the first way people will accept help. It's a doorway to being able to help them in multiple ways: mental, emotional, aka more than the physical."*
> *"I want to be a beacon of hope to the hopeless, as Jesus is."*
> *"It fits with my worldview. I like being around people and talking to people and listening to their stories."*
> *"To provide for my daughter"*

Moral obligation to respond.

Altruism may account for the 74.5% of respondents who agreed (strongly agree 31.8%, n = 35; somewhat agree 42.7%, n = 47) that student nurses have a moral obligation to respond during a disaster. Few respondents (8.1%, n = 9) disagreed (strongly disagree 1.8%, n = 2; somewhat disagree 6.4%, n = 7) that nursing student have a moral obligation to respond during a disaster. Table 4.13 details the level of agreement on moral obligation to respond.

Table 4.13

Summary of Responses for Level of Agreement on Moral Obligation

Level of agreement	n (%)
Strongly agree-5	35 (31.8%)
Somewhat agree-4	47 (42.7%)
Neither agree nor disagree-3	19 (17.3%)
Somewhat disagree-2	7 (6.4%)
Strongly disagree-1	2 (1.8%)
Median	4.00
Interquartile range	2.00
Percentile 25	3.00
50	4.00
75	5.00
Skewness	-0.89
Skewness Std Error	0.23
Kurtosis	0.56
Kurtosis Std Error	0.46

Encouraged to volunteer.

Altruism may also account for the majority of participant's who agreed (84.5%, n = 93) student nurses should be encouraged to volunteer during a disaster (strongly agree 48.2%, n = 53; somewhat agree 36.4%, n = 40). Only three participants (2.7%) did not believe that students should be encouraged to volunteer during a disaster. Table 4.14 summarizes the responses collected.

Table 4.14

Summary of Responses for Level of Agreement on Encouraged to Volunteer

Level of agreement	n (%)
Strongly agree-5	53 (48.2%)
Somewhat agree-4	40 (36.4%)
Neither agree nor disagree-3	14 (12.7%)
Somewhat disagree-2	3 (2.7%)
Strongly disagree-1	0 (0.0%)
Median	4.00
Interquartile range	1.00
Percentile 25	4.00
50	4.00
75	5.00

Skewness	-0.93
Skewness Std Error	0.23
Kurtosis	0.22
Kurtosis Std Error	0.46

Pre-registered volunteer.

Although the majority of respondents believed student nurses should be encouraged to volunteer during a disaster, only 16 respondents (14.5%) indicated they had registered with a volunteer disaster response organization such as the American Red Cross or Medical Reserve Corps. I reviewed the responses of the 16 pre-registered volunteer and found that 15 of the respondents either strongly agreed (n = 10) or somewhat agreed (n = 6) that students should be encouraged to volunteer. The remaining one respondent neither agreed nor disagreed that students should be encouraged to volunteer. Table 4.15 details respondent's status as a pre-registered disaster volunteer.

Table 4.15

Summary of Responses for Pre-Registered Volunteers

Pre-registered volunteer	Yes	No
Pre-registered with volunteer disaster response organization	16 (14.5%)	94 (85.5%)

More research is necessary to investigate the reasons for the difference between the strong belief that students should be encouraged to volunteer and the low percentage of student nurses pre-registered as volunteers. The disparity may indicate student nurses are unaware of volunteer opportunities or do not know how to become a volunteer.

Concern for self.

A majority of participants (73.6%, n = 81) indicated that they would be concerned for their personal safety if they responded to a disaster (somewhat agree 49.1%, n = 53; strongly agree 24.5%, n = 27). Few participants (12.7%, n = 14) disagreed with the statement at any level

(somewhat disagree 7.3%, n = 8; strongly disagree 5.5%, n = 6). Table 4.16 provides the level of agreement responses relating to concern for personal safety.

Table 4.16

Summary of Responses for Level of Agreement on Concern for Personal Safety

Level of agreement	n (%)
Strongly agree-5	27 (24.5%)
Somewhat agree-4	54 (49.1%)
Neither agree nor disagree-3	15 (13.6%)
Somewhat disagree-2	8 (7.3%)
Strongly disagree-1	6 (5.5%)
Median	4.00
Interquartile range	1.25
Percentile 25	3.00
50	4.00
75	4.25
Skewness	-1.08
Skewness Std Error	0.23
Kurtosis	0.80
Kurtosis Std Error	0.46

Concern for family.

Concern for the wellbeing of one's family appeared to be important to respondents in this study. One-half of the participants strongly agreed with the statement that they would be concerned for their family's wellbeing and safety if they responded to a disaster with 50% (n = 55). Another 30% somewhat agreed that they would with the statement about feeling concerned about their families safety (somewhat agree 30%, n = 33). Only 7.3% (n = 8) disagreed at some level with the statement (somewhat disagree 5.5%, n = 6; strongly disagree 1.8%, n = 2). Table 4.17 details the level of agreement on concern for the safety and well-being of family.

Table 4.17

Summary of Responses for Level of Agreement on Concern for Family Safety

Level of agreement	n (%)
Strongly agree-5	55 (50.0%)
Somewhat agree-4	33 (30.0%)
Neither agree nor disagree-3	14 (12.7%)
Somewhat disagree-2	6 (5.5%)
Strongly disagree-1	2 (1.8%)
Median	4.50
Interquartile range	1.00
Percentile 25	4.00
50	4.50
75	5.00
Skewness	-1.25
Skewness Std Error	0.23
Kurtosis	1.07
Kurtosis Std Error	0.46

Disaster training.

Exactly half of the respondents (50%) reported they had attended disaster training as part of their nursing degree program. Table 4.18 provides the number of respondents who had and had not attended disaster training. Table 4.19 provides the number of disaster courses attended by each of the 55 participants who reported attending formal disaster training at their university. As both are nominal variables, the frequency distribution is the most appropriate representation of the data. Analysis did not provide a measure of dispersion, as it is not appropriate for nominal data.

Table 4.18

Summary of Responses for Attended Formal Disaster Training

Attended disaster training	Yes	No
Attended formal disaster training from university as part of degree program	55 (50.0%)	55 (50.0%)

Table 4.19

Summary of the Number of Formal Disaster Training Courses Completed

Number of courses attended	n (%)
1 course	39 (35.5%)
2 courses	5 (4.5%)
3 courses	8 (7.3%)
4 courses	3 (2.7%)

The more commonly identified training topics included disaster preparedness, Basic Disaster Life Support (BDLS), and emergency management. A majority of respondents (93.6%, n = 103) believed that disaster curricula should be required in nursing degree programs. The responses in Table 4.20 indicate that student nurses understand the importance of disaster training to prepare them for their role as a licensed nurse during future disaster.

Table 4.20

Summary of Responses on Disaster Training Required in Nursing Degree Programs

Disaster curricula required	Yes	No
Disaster training curricula should be required in nursing degree programs	103 (93.6%)	7 (6.4%)

Type of disaster.

More than half of the respondents were willing to respond to all the disaster scenarios. Participants were most willing to respond to a tornado (90.0%, n = 99), mass casualty incident (89.1%, n = 98), and an earthquake (87.3%, n = 96). Fewer respondents were willing to respond to a biological terrorist attack (50.9%, n = 56) and an infectious disease outbreak (53.6%, n = 59). Table 4.21 details respondent's intent to respond by disaster type and Table 4.22 summarizes the dichotomized responses.

Table 4.21

Summary of Responses for Willingness to Respond by Disaster Scenario

Disaster Scenario	Yes		Not Sure		No	
Earthquake	96	(87.3%)	10	(9.1%)	4	(3.6%)
Winter storm	85	(77.3%)	15	(13.6%)	10	(9.1%)
Tornado	99	(90.0%)	9	(8.2%)	2	(1.8%)
Flood	94	(85.5%)	10	(9.1%)	6	(5.5%)
Mass casualty incident	98	(89.1%)	8	(7.3%)	4	(3.6%)
Influenza pandemic	75	(68.2%)	23	(20.9%)	12	(10.9%)
Infectious disease outbreak	59	(53.6%)	31	(28.2%)	20	(18.2%)
Biological terrorist event	56	(50.9%)	34	(30.9%)	20	(18.2%)
Chemical terrorist event	71	(64.5%)	28	(25.5%)	11	(10.0%)
Radiologic terrorist event	66	(60.0%)	31	(28.2%)	13	(11.8%)

Table 4.22

Summary of Dichotomized Responses for Willingness to Respond by Disaster Scenario

Disaster Scenario	Yes		No	
Earthquake	96	(87.3%)	14	(12.7%)
Winter storm	85	(77.3%)	25	(22.7%)
Tornado	99	(90.0%)	11	(10.0%)
Flood	94	(85.5%)	16	(14.5%)
Mass casualty incident	98	(89.1%)	12	(10.9%)
Influenza pandemic	75	(68.2%)	35	(31.8%)
Infectious disease outbreak	59	(53.6%)	51	(46.4%)
Biological terrorist event	56	(50.9%)	54	(49.1%)
Chemical terrorist event	71	(64.5%)	39	(35.5%)
Radiologic terrorist event	66	(60.0%)	44	(40.0%)

College student specific barriers.

Respondents believed not knowing enough to help (61.8%, n = 68) and not being licensed (53.6%, n = 59) might affect their willingness to respond during a disaster. Table 4.23 summarizes the responses relating to being a college student and 4.24 provides the dichotomized responses.

Table 4.23

Summary of Responses to College Student Specific Barriers

College Student Specific Barriers	Yes		Not Sure		No	
Heavy course load	56	(50.9%)	7	(6.4%)	47	(42.7%)
Don't know enough to help	68	(61.8%)	6	(5.5%)	36	(32.7%)
Not licensed yet	59	(53.6%)	6	(5.5%)	45	(40.9%)
Not insured for liability	49	(44.5%)	12	(10.9%)	49	(44.5%)
Have a part-time or full-time job	43	(39.1%)	2	(1.8%)	65	(59.1%)

Table 4.24

Summary of Dichotomized Responses to College Student Specific Barriers

College Student Specific Barriers	Yes		No	
Heavy course load	56	(50.9%)	54	(49.1%)
Don't know enough to help	68	(61.8%)	42	(38.2%)
Not licensed yet	59	(53.6%)	51	(46.4%)
Not insured for liability	49	(44.5%)	61	(55.5%)
Have a part-time or full-time job	43	(39.1%)	67	(60.9%)

Data Analysis

Data analysis occurred in three stages, bivariate analysis, multivariate and hypotheses testing. The different analyses allowed a comprehensive examination and better understanding of the data. Bivariate analysis identified correlations between the DV and all IVs as well as correlations between paired IVs. I used multiple regression to identify groups of IVs that best predicted the DV, overall willingness score. Finally, I conducted statistical analysis to test each hypothesis.

Bivariate Analysis

To identify correlations between the DV and IVs, I used three correlation tests based on the level of measurement of the IVs. Point-biserial correlation examined the relationship between the DV and dichotomous IVs. Kendall's tau analyzed correlations between the DV and ordinal IVs and Pearson's correlation examined relationships between the DV and interval IVs. Table

4.25 details the results of correlation analysis and identifies the statistically significant correlations.

Table 4.25

Summary of Correlation Analysis Results between Dependent Variable and Independent Variables

Independent Variable	Correlation Coefficient	95% BCa CI
Dichotomous variables	r_{pb}	
Barrier – fear for personal safety	-0.34**	[-0.48. -0.17]
Barrier – fear for family safety	-0.09	[-0.25, 0.09]
Barrier – responsibility for dependent children	-0.17 [a]	[-0.01, 0.33]
Barrier - type of disaster	-0.51**	[-0.64, -0.36]
Barrier – lack of training	-0.29**	[-0.45, -0.13]
Barrier – being a student	-0.16[b]	[-0.36, 0.04]
Enabler – vaccines and prophylaxis available to me	0.05	[-0.20, 0.38]
Enabler – provided with appropriate PPE	0.19[c]	[-0.14, 0.53]
Enabler – vaccines and prophylaxis provided to family	0.09	[-0.15, 0.34]
Enabler - knew I would be safe	-0.19*	[-0.27, -0.09]
Enabler –knew family would be safe	-0.06	[-0.16, 0.07]
Enabler –more knowledge about disaster response	-0.13	[-0.21, -0.02]
Enabler - access to safe reliable childcare	0.38**	[0.21, 0.55]
Enabler - access to safe reliable pet care	0.09	[-0.09, 0.28]
Task – feed patients	0.27[d]	[-0.04, 0.52]
Task – serve refreshment to staff	0.11	[-0.15, 0.35]
Task – provide childcare for hospital workers	-0.17[e]	[-0.41, 0.07]
Task – provide clinical support	0.34**	[0.19, 0.55]
Task – provide clinical care	0.42**	[0.20, 0.62]
Task – provide emotional support	0.23[f]	[-0.01, 0.47]
Task - administrative support	0.27**	[0.06, 0.48]
Task - whatever tasks need to be done	0.32**	[0.09, 0.54]
Disaster type - earthquake	0.45**	[0.25, 0.63]
Disaster type - winter storm	0.30**	[0.09, 0.49]
Disaster type - tornado	0.43**	[0.18, 0.62]
Disaster type - flood	0.42**	[0.20, 0.61]
Disaster type - mass casualty incident	0.45**	[0.22, 0.62]
Disaster type - influenza pandemic	0.37**	[0.18, 0.54]
Disaster type - infectious disease outbreak	0.47**	[0.34, 0.59]
Disaster type - biological terrorist attack	0.48**	[0.34, 0.61]
Disaster type - chemical terrorist attack	0.39**	[0.22, 0.55]
Disaster type - radiologic terrorist attack	0.38**	[0.21, 0.53]
Nursing motivation - have a calling	0.21*	[0.03, 0.38]
Nursing motivation - help people cope with illness	0.30[g]	[-0.07, 0.58]
Nursing motivation - help people	0.34**	[0.13, 0.60]
Nursing motivation - gives my life meaning	0.24**	[0.02, 0.43]
Nursing motivation - work in a caring occupation	0.09	[-0.14, 0.34]

Nursing motivation - advance in the field of healthcare	0.10	[-0.09, 0.29]
Nursing motivation - offers job security	-0.14	[-0.25, -0.01]
Nursing motivation - interested in science	0.11	[-0.08, 0.31]
Nursing motivation - job flexibility	0.05	[-0.14, 0.23]
Nursing motivation – finish school quickly	0.003	[-0.19, 0.19]
Nursing motivation - earn a good salary	-0.21*	[-0.39, -0.01]
College student barrier – heavy course load	-0.08	[-0.24, 0.12]
College student barrier – don't know enough to help	-0.20*	[-0.35, -0.02]
College student barrier – not yet licensed	-0.19*	[-0.35, -0.004]
College student barrier – not insured liability	-0.26**	[-0.42, -0.08]
College student barrier – part or full time job	0.10	[-0.09, 0.28]
Pre-registered volunteer	0.11	[-0.11, 0.27]
Attended disaster training	-0.08	[-0.28, 0.11]
Number of courses attended-1	0.10	[-0.06, 0.29]
Number of courses attended-2	0.04	[-0.15, 0.22]
Number of courses attended-3	0.03	[-0.16, 0.23]
Number of courses attended-4	-0.02	[-0.17, 0.20]
Curricula required in nursing program	0.32**	[0.07, 0.53]
Dependent children in household-yes	0.17[h]	[-0.01, 0.31]
Gender - female	-0.17*	[-0.27, -0.05]
Ordinal variables	τ	
Moral obligation	0.32**	[0.15, 0.47]
Encouraged to volunteer	0.41**	[0.25, 0.55]
Concern for self	-0.19**	[-0.33, -0.04]
Concern for family	-0.02	[-0.18, 0.14]
Difficulty of childcare during disaster	-0.37*	[-0.65, -0.03]

Note. *p < .05, **p < .01, one-tailed.

A. Correlation was statistically significant (p = .042); however, bootstrap upper and lower confidence intervals crossed zero.
B. Correlation was statistically significant (p = .044); however, bootstrap upper and lower confidence intervals crossed zero.
C. Correlation was statistically significant (p = .025); however, bootstrap upper and lower confidence intervals crossed zero.
D. Correlation was statistically significant (p = .002); however, bootstrap upper and lower confidence intervals crossed zero.
E. Correlation was statistically significant (p = .038); however, bootstrap upper and lower confidence intervals crossed zero.
F. Correlation was statistically significant (p = .009); however, bootstrap upper and lower confidence intervals crossed zero.
G. Correlation was statistically significant (p = .001); however, bootstrap upper and lower confidence intervals crossed zero.
H. Correlation was statistically significant (p = .036); however, bootstrap upper and lower confidence intervals crossed zero.

Point-biserial correlation analysis also identified significant associations among sets of IVs including the eight tasks, eleven nursing profession motivators, six barriers, ten disaster types, five student nurse barriers, and eight enablers. Statistically significant associations among

IVs can cause issues of multicollinearity during multivariate analysis. Table 4.26 details the number of associations identified among the sets of IVs.

Table 4.26

Summary of Correlations among Groups of Independent Variables

Variable Groups	Number of Factors	Possible Associations	Actual Associations	Percentage of Associations
Tasks	8	28	27	94.4%
Nursing motivation	11	55	17	30.9%
Barriers	6	15	10	66.7%
Disaster type	10	45	41	91.1%
Nursing student barriers	5	10	6	60.0%
Enablers	8	28	13	46.4%

To mitigate the effects of multicollinearity during multivariate analysis, I created a composite variable for each group of IVs by counting specific responses.

- *Task count* – total number of 'Yes' responses to each of the eight task questions. The new interval variable represented the total number of tasks respondents were willing to perform.
- *Motivation count* - total number of 'Yes' responses to each of the eleven motivation questions. The new interval variable represented the total number of motivational factors that influenced participants to enter nursing profession.
- *Barrier count* - total number of 'Yes' responses to each of the six barrier questions. The new interval variable represented the total number of barriers respondents believed would reduce their willingness to respond.
- *Disaster scenario count* - total number of 'Willing' responses to the ten specific disaster scenarios. The new interval variable represented the total number of disaster types to which respondents were willing to respond.

- *Nursing student count* - total number of 'Yes' responses to each of the five student nursing barrier questions. The new interval variable represented the total number of student specific barriers that reduced willingness.
- *Enabler count* - total number of 'Yes' responses to each of the eight enabler questions. The new interval variable represented the total number of enablers that respondents believed might increase their willingness to respond.

In addition to the associations within sets of related factors, Kendall's tau correlation analysis identified a statistically significant association ($\tau = 0.45$, 95% BCa CI [0.32, 0.60], $p < .001$) between the ordinal IVs, *moral obligation* and *encouraged to volunteer*, both of which may represent characteristics of altruism. I created a composite variable, *altruism score*, by adding the numerical rank value of participant's responses to both measures.

Descriptive analysis of the new variables found 22.7% (n = 25) of respondents perceived three barriers would reduce their willingness to respond, closely followed by two and four barriers (22%, n = 24). Ten percent of respondents reported no barriers (n = 11). A majority of respondents indicated they were willing to perform all eight tasks during a disaster (67%, n = 74). Table 4.27 provides the descriptive statistics for the newly created composite variables.

Table 4.27

Summary of Descriptive Statistics of Composite Independent Variables

Variable	Mean	Std Dev	Median	Min - Max	Intrqrtile Range	Skewness	Kurtosis
Barrier count	2.85	1.58	3.00	0.00–6.00	2.00	-0.08	-0.59
Enabler count	6.87	1.19	7.00	3.00–8.00	5.00	-1.25	1.80
Task count	7.15	1.57	8.00	0.00–8.00	1.00	-2.44	7.00
Nursing motivation count	8.57	1.74	9.00	3.00–11.00	3.00	-0.69	0.52
Disaster scenario count	7.26	2.77	7.50	0.00–10.00	5.00	-0.70	-0.30
Student barrier count	2.50	1.55	3.00	0.00–5.00	3.00	-0.08	-0.96
Altruism score	8.26	1.49	8.00	4.00–10.00	3.00	-0.65	-0.06

I conducted bootstrapped Pearson's r correlation test to examine the relationship between the DV and each new composite IV. Analysis revealed statistically significant correlations between the DV and five of the new IVs. Table 4.28 provides the results of correlation analysis.

Table 4.28

Summary of Pearson's Correlations Analysis Results between Dependent Variable and Composite Independent Variables

Independent Variable	Correlation Coefficient	95% BCa CI
Interval variables	*r*	
Barrier count	-0.38**	[-0.52, -0.21]
Enabler count	0.19[a]	[-0.01, 0.39]
Task count	0.39**	[0.14, 0.58]
Disaster type count	0.63**	[0.48, 0.75]
Nursing motivation count	0.17[b]	[-0.07, 0.40]
Altruism score	0.52**	[0.33, 0.67]
Student barrier count	-0.20*	[-0.38, -0.01]

Note. *p < .05, **p < .01, one-tailed.

A. Correlation was statistically significant (p = .026); however, bootstrap upper and lower confidence intervals crossed zero.
B. Correlation was statistically significant (p = .041); however, bootstrap upper and lower confidence intervals crossed zero.

Additionally, **I** conducted Kendall's tau correlation tests using the ordinal variables, *willing to respond to natural disasters* and *willing to respond to human-caused disasters*, as outcome variables to assess whether the IVs affected the disaster types differently. While the DV provided the respondents overall willingness, it was also important to determine the relationship between the IVs and the two willing variables individually. First, I examined the relationships between *willing to respond to natural disasters* and each of the IVs. I then examined the relationship between *willing to respond to human-caused disasters* and each of the IVs.

The analysis revealed similar interactions between many of the IVs and both *willing to respond to natural disasters* and *willing to respond to human-caused* variables. However, results found that certain IVs related differently with the outcome variables. One such difference in relationship was the statistically signification negative correlation between the IV, *barrier-*

responsibility for children, and *willing to respond to human-caused disasters*, $\tau = -0.18$, $p = .022$, whereas the barrier did not significantly correlate with *willing to respond to natural disasters*, $\tau = -0.08$, $p = .193$. The correlation suggested that the presence of dependent children in the home may have a greater negative affect on responding to a human-caused disaster than a natural disaster.

Another interesting difference was in the relationship between the outcome variables and the IVs, *task-feed* patients and *task-provide emotional support*. Results of the correlation test suggested that student nurses may be more willing to feed patients and provide emotional support during a natural disaster ($\tau = 0.21$, $p = .011$; $\tau = 0.20$, $p = .018$) and less willing to perform the activities during a human-caused disaster ($\tau = 0.14$, $p = .055$; $\tau = 0.13$, $p = .070$).

Interestingly, the analysis revealed a significant correlation between *willing to respond to natural disasters* and the *student barrier-don't know enough to help* ($\tau = -0.30$, $p = .001$) and *student barrier-not yet licensed* ($\tau = -0.24$, $p = .010$). However, the IVs were not significantly correlated with *willing to respond to human-caused disasters* ($\tau = -0.14$, $p = .058$; $\tau = -0.09$, $p = .148$). A statistically significant correlation existed between *student barrier-part or full time job* and *willing to respond to human-caused disasters* ($\tau = 0.17$, $p = .030$) but not *willing to respond to natural disasters* ($\tau = 0.04$, $p = .318$).

Differences in correlations also existed with the composite variables *enabler count* and *student barrier count*. The IV, *enabler count*, was correlated with *willing to respond to human-caused disasters* ($\tau = 0.22$, $p = .005$) but not *willing to respond to natural disasters* ($\tau = 0.12$, $p = .087$) suggesting that enablers may have more influence on willingness to respond to human-caused disasters. The IV, *student barrier count*, had a statistically significant negative relationship with *willing to respond to natural disasters* ($\tau = -0.23$, $p = .003$) but not *human-caused disasters* ($\tau = -0.10$, $p = .113$). Table 4.29 summarizes the results of the Kendall's tau correlation tests of all IVs.

Table 4.29

Summary of Kendall's Tau Correlation Results between Willing to Respond to Natural and Willing to Respond to Human-Caused Disasters and Independent Variables

Independent Variable	Natural Disasters	Human-Caused Disasters
Dichotomous variables	*t*	*t*
Barrier – fear for personal safety	-0.28**	-0.27**
Barrier – fear for family safety	-0.14	-0.06
Barrier – responsibility for dependent children	-0.08	-0.18*
Barrier - type of disaster	-0.31**	-0.54**
Barrier – lack of training	-0.27**	-0.27**
Barrier – being a student	-0.15	-0.16*
Enabler – vaccines and prophylaxis available to me	-0.01	-0.06
Enabler – provided with appropriate PPE	0.09	0.05
Enabler – vaccines and prophylaxis provided to family	0.04	0.02
Enabler - knew I would be safe	-0.17*	-0.17*
Enabler –knew family would be safe	-0.05	-0.01
Enabler –more knowledge about disaster response	-0.14	-0.12
Enabler - access to safe reliable childcare	0.29**	0.39**
Enabler - access to safe reliable pet care	-0.03	0.08
Task – feed patients	0.21*	0.14
Task – serve refreshment to staff	0.01	0.01
Task – provide childcare for hospital workers	-0.05	-0.08
Task – provide clinical support	0.26**	0.18*
Task – provide clinical care	0.30**	0.30**
Task – provide emotional support	0.20*	0.13
Task - administrative support	0.17*	0.20*
Task - whatever tasks need to be done	0.22*	0.24**
Disaster type - earthquake	0.49**	0.33**
Disaster type - winter storm	0.22*	0.24**
Disaster type - tornado	0.34**	0.25**
Disaster type - flood	0.36**	0.28**
Disaster type - mass casualty incident	0.36**	0.32**
Disaster type - influenza pandemic	0.29**	0.25**
Disaster type - infectious disease outbreak	0.32**	0.36**
Disaster type - biological terrorist event	0.45**	0.43**
Disaster type - chemical terrorist event	0.28**	0.33**
Disaster type - radiological terrorist event	0.21*	0.35**
Nursing motivation - have a calling	0.19*	0.20*
Nursing motivation - help people cope with illness	0.21*	0.16*
Nursing motivation - help people	0.21*	0.20*
Nursing motivation - gives my life meaning	0.10	0.13
Nursing motivation - work in a caring occupation	0.01	0.03
Nursing motivation - advance in the field	0.15	0.09
Nursing motivation - offers job security	-0.12	-0.12
Nursing motivation - interested in science	0.07	0.13

Nursing motivation - job flexibility	-0.04	0.07
Nursing motivation – finish school quickly	-0.15	-0.01
Nursing motivation - earn a good salary	-0.21*	-0.20*
Student barrier – heavy course load	-0.08	-0.05
Student barrier – don't know enough to help	-0.30**	-0.14
Student barrier – not yet licensed	-0.24**	-0.09
Student barrier – not insured liability	-0.19*	-0.20*
Student barrier – part or full time job	0.04	0.17*
Pre-registered volunteer	0.13	0.15*
Attended disaster training	0.02	-0.10
Curricula required in nursing program	0.22*	0.23**
Dependent children in household-yes	0.21*	0.18*
Gender - female	-0.17*	-0.14
Ordinal variables		
Moral obligation	0.32**	0.29**
Encouraged to volunteer	0.36**	0.41**
Concern for self	-0.20*	-0.17*
Concern for family	-0.13	-0.002
Interval variables		
Barrier count	-0.30**	-0.32**
Enabler count	0.12	0.22**
Task count	0.19*	0.22**
Disaster type count	0.42**	0.44**
Nursing motivation count	0.01	0.07
Altruism score	0.35**	0.37**
Student barrier count	-0.23**	-0.10

Note. *p < .05, **p < .01, one-tailed.

Multiple Regression Analysis

The findings from correlation analyses aided in the determination of which IVs to include in multiple regression analysis to predict overall willingness score. Bivariate analysis revealed statistically signification correlations between the DV and twenty-two dichotomous IVs and three ordinal IVs at 99% confidence level ($p < .01$), and six dichotomous variables and one ordinal variable at the 95% confidence level ($p < .05$). My goal in conducting multiple regression analysis was "to identify the fewest IVs necessary to predict the DV, where each IV predicted a substantial and independent segment of the variability in the DV" (Tabachnick & Fidell, 2013, p. 122). Specifically, multiple regression tested the capacity of a limited number of IVs to predict the DV and the contributive value of each IV in that prediction. Due to the sample size, I limited

the number of IVs to seven as detailed in Chapter 3. With a limit of seven IVs for inclusion and the large number of correlations between the DV and IVs, I used the statistically significant composite variables created during bivariate analysis, rather than the individual IVs (Tabachnick & Fidell, 2013). I selected the variables for inclusion in the regression model based on the strength of the bivariate correlation with the DV, theoretical relevance, and anticipated contribution.

I conducted multiple linear regression using 1,000 bootstrapped samples. The model included the variables *disaster count, altruism score, task count, barrier count,* and *dependent children in the household-yes*. Each of the variables *disaster count, altruism score, task count,* and *barrier count* had either a moderate (above ±0.30) (Field, 2013) or strong (above ±0.50) (Field, 2013) significant bivariate correlation with the DV. The variable, *dependent children in the household*, was not significantly correlated with the DV in bivariate correlation analysis; however, the variable was prevalent throughout related literature and therefore included in the regression model.

Prior to evaluating the goodness of fit of the model, I examined the regression results for multicollinearity among IVs, outliers, linearity, and normality. The review of the correlation coefficients revealed the largest correlation among the IVs was $r = 0.43$ which was below the threshold of concern for multicollinearity, $r > 0.90$, and therefore not an issue within the model (Field, 2013). Additionally, the tolerance and VIF values for each IV did not cause concern. Tolerance values less than 0.2 and VIF values greater than 10 suggest potential multicollinearity (Field, 2013). The tolerance and VIF values for each predictor variable in the model were below the level of concern (Field, 2013).

I then checked the assumption of normality and linearity by examining the histogram and normal probability (P-P) plot of the regression standardized residual in the model. The histogram in Figure 4.3 displayed the distribution of the regression standardized residuals, with a potential outlier. The P-P plot shown in Figure 4.4 suggested the residuals in the hierarchical model did not

significantly violate the assumption of normality. The points on the P-P plot fell close to a straight diagonal line from bottom left to upper right indicating the distribution of residuals did not violate the assumption of normality (Field, 2013 & Pallant, 2013). Inspection of the casewise diagnostics of standardized residuals between predicted and recorded values revealed one case with a standardized residual greater than ±2.50 and four greater than ±2.00 (Field, 2013). With a sample size of 110, 5 cases outside of ±2.00 and one case outside ±2.50 is acceptable (Field, 2013). Since the review did not reveal any major areas of concern and the analysis included 1,000 bootstrapped samples, I moved forward with the evaluation of the model.

Figure 4.3

Histogram of Standard Multiple Regression Model Standardized Residuals

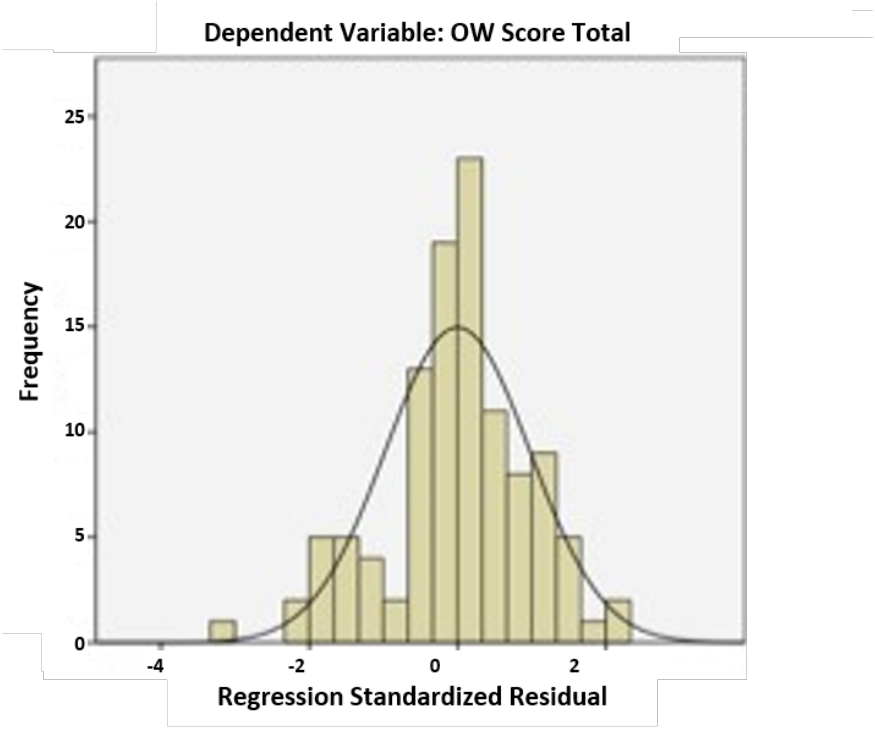
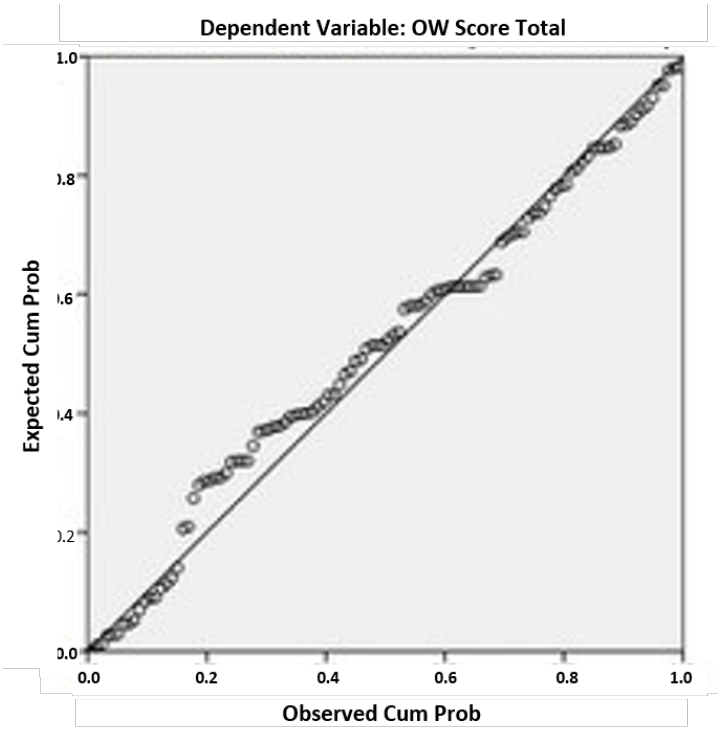


Figure 4.5

Normal Probability Plot (P-P) of Regression Standardized Residuals



The IVs in the model significantly predicted the DV, *overall willingness score*, R = 0.75, R^2 = 0.56, F (5, 104) = 26.89, $p < .001$) indicating the model was a good fit for the observed data. I used the Beta values to determine the importance of each IV within the model. Four of the five IVs made statistically significant unique contributions to the variance of the DV, after controlling for the other variables. The variable *disaster count* making the strongest contribution (β = 0.42, $p < .001$). The IVs *barrier count (*β = -0.27, $p < .001$), *altruism score* (β = 0.25, $p = .001$), and *dependent children in the household* (β = 0.21, $p = .002$) provided smaller, yet statistically significant, unique contributions to the variance. The variable, *task count*, did not provide a significant unique contribution in the model (β = 0.09, $p = .220$); however, it did have a statistically significant bivariate correlation with the DV in the model, $r = 0.39$, $p < .001$. Table

4.30 summarizes the multiple regression model including the standardized coefficients (β), and bootstrapped unstandardized coefficients (*B*) and confidence intervals, and standardized errors.

Table 4.30

Summary of Multiple Regression Model Predicting Overall Willingness Score

	Model			
Independent Variables	*B*	*SE B*	*β*	*95 % BCa CI*
(Constant)	10.99**	1.31		[8.77, 13.63]
Disaster count	0.41**	0.08	0.42	[0.26, 0.56]
Altruism score	0.45**	0.16	0.25	[0.14, 0.75]
Task count	0.16	0.16	0.09	[-0.17, 0.47]
Barrier count	-0.46**	0.10	-0.27	[-0.68, -0.27]
Dependent children in household-yes	1.57**	0.46	0.21	[0.58, 2.51]
R	0.75			
R^2	0.56			
F	26.89**			

Note: **p < .01. one-tailed.

Hypothesis Testing

The present study included three research questions and six hypotheses. The following section describes how I tested each hypothesis and details the results.

$H1_a$ – Nursing students with dependent children will be less willing to respond to a disaster than those with no dependent children.

To determine whether a relationship existed between the presence of children in the household and a student nurse's overall willingness to respond, I conducted bootstrapped point-biserial correlation using the IV, *presence of children in household-yes*, and the DV, *overall willingness score*. Correlation analysis found a small statistically significant positive correlation (r_{pb} = 0.17, 95% BCa CI [-0.01, 0.33], p = .043; however, the bootstrapped confidence interval crossed zero. Based on the results, I rejected the hypothesis, concluding that the presence of children may actually positively influence overall willingness. The findings differed from

previous research among healthcare workers (Balicer et al., 2010, 2011; O'Sullivan et al., 2009) which found a negative correlation between willingness and the presence of dependent children.

$H2_{a}$ - Concern for self will reduce willingness of nursing students to respond to disasters.

Kendall's tau test with 1,000 sample bootstrapping found a statistically significant correlation between the DV, *overall willingness score*, and the ordinal IV, *concern for personal safety and well-being*, τ = -0.19, 95% BCa CI [-0.33, -0.04], p = .008. Additionally, bootstrapped point-biserial correlation analysis revealed a relationship between the DV and the IV, *barrier-fear for personal safety*, r_{pb} = -0.34, 95% BCa CI [-0.48, -0.17], p < .001. Based on the findings, I retained the hypothesis. The findings indicated that personal safety might be an important factor in overall willingness. The analysis suggested that overall willingness decreased as concern for personal safety increased.

$H3_{a}$ - Concern for family/loved ones will reduce willingness of nursing students to respond to disasters.

I rejected this hypothesis based on the results of a bootstrapped Kendall's tau test which found no significant relationship between the DV, *overall willingness score*, and the ordinal IV, *concern for the safety and well-being of family* (τ = -0.02, 95% BCa CI [-0.18, 0.14], p = .402). Bootstrapped point-biserial correlation analysis found similar results between the DV and the IV, *barrier-fear for family safety and well-being*, r_{pb} = -0.09, 95% BCa CI [-0.25, 0.09], p = .178. Concern for family did not significantly affect overall willingness. The lack of relationships between the IVs and the DV may be because many respondents had never been married (63.6%, n = 70) and did not have dependent children (84.5%, n = 93).

$H4_a$ – Nursing students who receive disaster training will be more willing to respond to a disaster than nursing students who receive no training.

Point-biserial correlation analysis between the DV and IV, *attended training,* did not support this hypothesis. Analysis did not identify a statistically significant relationship between *overall willingness score* and *having attended disaster training*, r_{pb} = -0.08, 95% BCa CI [-0.29, 0.11], p = .211. I also conducted correlation testing between the DV and IVs, *barrier-lack of knowledge*, *enabler-more knowledge*, and *student barrier-do not know enough to help*. Point-biserial correlation test revealed significant moderate correlations between the DV and the IVs, *barrier-lack of training* (r_{pb} = -0.25, 95% BCa CI [-0.42, -0.07], p = .004) and *student specific barrier-do not know enough to help* (r_{pb} = -0.23, 95% BCa CI [-0.38, -0.08], p = .008). Analysis did not find a significant correlation between the DV and the IV *enabler-more knowledge about disaster response* (r_{pb} = -0.13, 95% BCa CI [-0.22, -0.02], p = .094).

Point-biserial correlation testing among the three IVs identified a strong positive correlation between the IVs *barrier-lack of training* and *student barrier-do not know enough to help*, r_{pb} = 0.42, 95% BCa CI [0.27, 0.58], p < .001, and between the IVs *enabler-more knowledge* and *student barrier-do not know enough to help*, r_{pb} = 0.27, 95% BCa CI [0.14, 0.39], p = .002. Testing also found a statistically significant relationship between the IVs *barrier-lack of training* and *enabler-more knowledge*, r_{pb} = 0.17, 95% BCa CI [-0.08, 0.34], p = .041; however, the bootstrapped confidence level crossed zero. Additionally, cross tabulation revealed statistically significant associations between the barrier, *lack of training,* and the barriers, *personal safety* (x^2 = 8.18, p = .004); *type of disaster* (x^2 = 19.38, p < .001); and *being a student* (x^2 = 5.07, p = .024). An association also existed between *lack of training* and the barrier, *family safety* (x^2 = 3.60, p = .058); however, it was slightly above the .05 significance level.

$H5_a$ – Being a college student will reduce the willingness of nursing students to respond to disasters.

Bootstrapped (1,000 sample) point-biserial correlation examined the relationship between the DV, *overall willingness score*, and the IV, *barrier-being a student*, r_{pb} = -0.16, 95% BCa CI [-0.36, 0.04], p = .044. The findings did not support the hypothesis because the 95% bootstrapped confidence intervals crossed zero. Additional point-biserial correlation analysis revealed significant correlations between the DV and three of the five student specific barriers, *student barrier-not insured for liability* (r_{pb} = -0.26, 95% BCa CI [-0.42, -0.08], p = .003), *student barrier-do not know enough to help* (r_{pb} = -0.20, 95% BCa CI [-0.35, -0.20], p = .018), and *student barrier-not licensed* (r_{pb} = -0.19, 95% BCa CI [-0.35, -0.004], p = .027). The results of correlation tests indicated lack of knowledge, and the absence of a professional nursing license and liability insurance decreased overall willingness.

$H6_a$ – Nursing students will be more willing to respond to natural disasters and less willing to respond to human-caused disasters.

I tested this hypothesis using the frequency distribution of the ordinal variables, *willing to respond to natural disaster* and *willing to respond to human-caused disasters*. A review of the responses to the Question 1a and 1b provided in Table 4.1 supported the hypothesis finding that more respondents were either somewhat willing or completely willing to respond to a natural disaster (92.7%, n = 102) than human-caused disaster (80.0%, n = 88). Additionally, Pearson's correlation test found a strong positive relationship between the DV and the IV, *disaster type count*, r = 0.63, 95% BCa CI [0.48, 0.75], p < .001. The strong positive correlation suggested the more disaster scenarios to which respondents were willing to respond, the higher their *overall willingness score*. I also conducted point-biserial correlation analysis to determine the relationship between DV and each of the ten disaster scenarios. Table 4.31 provides the analysis results, which revealed significant correlations of moderate effect size between the DV and the ten disaster scenarios.

Table 4.31

Summary of Correlation Results between Dependent Variable and Disaster Scenarios

Independent Variable	r_{pb}	95% BCa CI
Disaster type - earthquake	0.45**	[0.25, 0.63]
Disaster type - winter storm	0.30**	[0.01, 0.49]
Disaster type – tornado	0.43**	[0.18, 0.60]
Disaster type – flood	0.42**	[0.20, 0.60]
Disaster type - mass casualty incident	0.45**	[0.21, 0.62]
Disaster type - influenza pandemic	0.37**	[0.18, 0.54]
Disaster type - infectious disease outbreak	0.47**	[0.33, 0.60]
Disaster type - biological	0.48**	[0.35, 0.61]
Disaster type - chemical	0.39**	[0.22, 0.55]
Disaster type - radiological	0.38**	[0.21, 0.52]

Note: **p < .01. one-tailed.

CHAPTER V

DISCUSSION

Introduction

Student nurses may be able to fill a gap in human resources during a disaster. To do this, they must be willing to respond. To date, only a few studies have examined the willingness of nursing students to respond to a disaster (Rosychuk et al., 2008; Yonge et al., 2010, Young and Persell, 2004). The goal of the present study was to establish a foundational understanding of the willingness of baccalaureate-level nursing students to respond to disasters. To achieve the research goal, I investigated the willingness of baccalaureate nursing students at two universities to respond to disasters.

I conceptualized the variables in the study within the work-family role conflict theory and risk perception theory. The study examined the construct of willingness to respond as the intent to respond not actual response behavior. I attempted to address three questions by testing six hypotheses relating to factors that might affect overall willingness. The following chapter summarizes the statistical findings to answer each research question, identifies the limitations of the study, describes potential implications of the findings, and provides recommendations for future research and practical applications for the findings.

Research Questions

1. To what extent do nursing students perceive themselves as being willing to respond to disasters?

Respondents reported a high level of willingness to respond to disasters. The majority of respondents (86.4%, n=95) were completely willing to respond to both a natural disaster (92.7%, n = 102) and a human-caused disaster (80%, n = 88). The findings were similar to a study conducted by Ogedegbe et al (2012) among healthcare workers; however, the level of willingness in the present study exceeded that found in other studies (see Burke et al., 2011). As this study is the first to examine the willingness of baccalaureate nursing students to respond to natural and human-caused disasters, additional research will determine if the results are consistent among nursing students or specific to the participants in this study.

2. What factors affect the willingness of nursing student to respond to disasters?

Correlation analysis identified relationships between the DV and twenty-eight dichotomous IVs, four ordinal IVs, and five interval IVs; however, the results of multiple regression analysis were most indicative of affects. Five variables explain 56% of the variance in overall willingness score, *disaster count*, *altruism score*, *task count*, *barrier count*, and *dependent children in the household*. Three variables provided a positive significant contribution to the prediction of the DV, *disaster count*, *altruism score*, and *dependent children in the household-yes*. The IV, *barrier count*, significantly contributed to the model; however, the affect was negative. The negative affect meant that as the number of perceived barriers increased, overall willingness decreased. Contrarily, increasing the number of disaster scenarios to which respondents were willing to respond and their feelings of altruism increased overall willingness. The multiple regression findings coincided with the results of bivariate analysis.

An unexpected finding during bivariate analysis was the lack of significant bootstrapped confidence intervals in the correlation between the DV and IVs, *dependent children present in the*

household-yes (r_{pb} = 0.17, 95% BCa CI [-0.01, 0.31], p = .036) and *barrier-responsibility for dependent children* (r_{pb} = 0.17, 95% BCa CI [-0.01, 0.33], p = .042). Of additional interest was the direction of the relationship between the DV and the children related IVs. Previous studies identified responsibility for dependent children as a significant barrier to willingness to respond to disasters (Adams & Berry, 2012; Burke et al., 2011; Grimes & Mendias, 2010; Qureshi et al., 2005). However, in the present study, bivariate analysis revealed a positive, although not statistically significant, correlation between overall willingness and the *presence of children in the household-yes*. Additionally, the IV, *dependent children present in the household-yes*, had a significant additive affect in hierarchical multiple regression, B = 1.01, 95% BCa CI [0.30, 1.83], β = 0.14, p = .004.

The lack of statistically significant correlation and negative effects by the IVs, *barrier-responsibility for dependent children* and *dependent children in the household-yes*, may be related to the fact most respondents did not have dependent children (84.5%, n = 93). At their current point in life, respondents without children may not believe that having children would affect their willingness to respond. Frequency statistics using only respondents with children (15.5%, n = 17) supported this interpretation. A frequency table revealed that 100% (n = 17) of respondents with children believed the *barrier-fear for family safety* would prevent them from responding to a disaster, while 82.4% (n = 14) believed the *barrier-responsibility for dependent children* would prevent them from responding. Additionally, all respondents with children believed that providing vaccines to their family, ensuring family safety, and access to childcare would increase their willingness to respond.

Perceived moral obligation and a belief that nursing students should be encouraged to volunteer was significantly related to willingness to respond to a disaster. Many respondents (74.5%) agreed that nursing students had a moral obligation to respond and 84.5% believed student nurses should be encouraged to volunteer during a disaster. Both variables were

significantly correlated with the DV (moral obligation $\tau = 0.32$, 95% BCa CI [0.15, 0.47], $p < .001$; encouraged to volunteer $\tau = 0.41$, 95% BCa CI [0.25, 0.55], $p < .001$) and with each other ($\tau = 0.45$, 95% BCa CI [0.30, 0.59], $p < .001$). Both perceived moral obligation and a belief that nursing students should be encouraged to volunteers may be a characteristic of altruism. Due to that significant correlation between the IVs, I created the composite altruism variable to use in multiple regression. The composite variable, *altruism score*, had a strong positive relationship with the DV, $r = 0.52$, 95% BCa CI [0.33, 0.67], $p < .001$. The findings were similar to a study by Rosychuk et al. (2008) in which the researchers contended that understanding what motivates individuals to volunteer during a disaster is critical to the development of volunteer training and recruitment strategies (Rosychuk et al., 2008).

3. To which type of disasters are nursing students most willing to respond?

Respondents in the present study were more willing to respond to natural disasters than human-caused disasters. As detailed in Chapter 4, descriptive statistics revealed more respondents (92.7%, n = 102) were either completely or somewhat willing to respond to natural disasters than human-caused disasters (80.0%, n = 88). Similarly, 94.5% (n = 104) of respondents either strongly or somewhat agreed with the statement relating to willingness to respond to natural disasters, whereas 83.6% (n = 92) somewhat and strongly agreed with the statement of willingness to respond to human-caused disaster.

Frequency statistics for the responses to the ten disaster scenarios confirmed that respondents were more willing to respond to a disaster caused by a tornado (90.0%, n = 99), earthquake (81.3%. n = 96), or flood (85.5%, n = 94) and less willing to respond to a chemical (64.5%, n = 71), radiological (60.0%, n = 66), or biological (50.9%, n = 56) terrorist attack. Based on the findings, I concluded that it might be possible to improve overall willingness by identifying factors that negatively affect willingness to respond to human-caused disaster scenarios and implementing strategies to mitigate the negative effects.

Kendall's tau correlation analysis found larger negative correlations between the barriers, *responsibility for dependent children* and *type of disaster*, and the ordinal variables, *willingness to respond to human-caused disasters* (τ = -0.18, p = .044; τ = -0.54, p < .001) than *willingness to respond to natural disasters* (τ = -0.08, p = .386; τ = -0.31, p = .001). Additionally, the *enabler-access to reliable childcare* had a larger correlation with *willingness to respond to human-caused disasters* (τ = 0.39, p < .001) than *willingness to respond to natural disasters* (τ = 0.29, p = .002). Of particular interest was the difference in relationship between the interval variable, *enabler count*, and *willingness to respond to natural disasters* (τ = 0.12, p = .087) and *human-caused disasters* (τ = 0.22, p = .005) which suggested increasing the number of perceived enablers may increase *willingness to respond to human-caused disasters* more than *willingness to respond to natural disasters*. The different analyses provided insight into potential strategies to increase willingness to respond to different types of disasters as well as overall willingness. Additional research may help identify additional factors that negatively influence willingness to respond and aid the development of strategies to reduce their affects.

Conclusions

Based on the interpretation of the statistical analysis conducted in this study, I made the following conclusions.

1. Concern for personal safety and well-being reduced willingness to respond to a disaster.
2. Student nurses were more willing to respond to natural disasters than human-caused disasters.
3. As the number of disaster scenarios to which student nurses were willing to respond increased, overall willingness also increased.

4. As the number of barriers perceived by nursing students increased, overall willingness decreased.
5. The presence of children in the household, attending disaster training, being a college student, and concern for the safety and wellbeing of family did not affect overall willingness to respond to a disaster.

Limitations

While the present study provided valuable insight into the willingness of student nurses to respond to a disaster, the findings must be considered in conjunction with the study's limitations. One limitation of the present study related to the use of nonprobability sampling, rather than probability sampling, to collect data. Due to the policies at both universities, I was unable to personally obtain student email information and therefore coordinated with a faculty member at each university to distribute the invitation letter and survey.

Additional limitations related to the sample size (n = 398), population subgroup size, and response rate (26.7%). The invitation to participate and link to the online survey was distributed to 317 baccalaureate-nursing students at the U of U CoNHP; however, only 41 (12.9%) of those 317 students completed the online survey. At the ASTATE CoNHP only 81 students enrolled in the Spring 2016 nursing research class received the invitation to participate with 69 (85.2%) completing the survey. In the Spring 2016 semester, 623 students were enrolled in the baccalaureate-level nursing program at ASTATE CoNHP. The restriction to a single class at ASTATE and the low response rate could affect the generalizability of findings to a broader population.

Finally, the non-normal distribution of the DV may also be a potential limitation. Bootstrapping with 1,000 samples provided a process to mitigate the issues relating to non-normal distribution. I determined bootstrapping with parametric statistical tests to be the best option for the data while also acknowledging the process as a potential limitation when interpreting statistical results.

Recommendations

Consistent with previous research (Chaffee, 2009), the results of the present study indicate that nursing students have intentions to respond during a disaster. Their intentions are represented by the high level of *willingness to respond to natural* and *human-caused disasters*, as well as to specific *disaster scenarios*. Descriptive and bivariate analysis results indicated that disaster training was important to nursing students; however, it is not clear what affect training may have in reducing the perception of other barriers as well as improving willingness to respond. Additionally, findings suggest that, while they may want to help, nursing students may not know how they can help during a disaster.

Disaster Training

A perceived *lack of training* negatively influenced *overall willingness to respond* as well as *willingness to respond to natural* and *human-caused disasters*. Previous researchers have identified a strong connection between the willingness of healthcare worker to respond to a disaster and disaster training and knowledge (Balicer et al., 2006; Barnett et al., 2009; Gershon et al., 2010; Goodhue et al., 2012).

The findings suggested that while some respondents believed a lack of training would reduce their willingness to respond and felt that as a student, they might not know enough to help; they did not strongly believe that training would increase their willingness to respond. The lack of a relationship between *overall willingness* and the IV, *enabler-more knowledge*, may be the result of inadequate measure. The potential impact of obtaining more knowledge was one of eight potential enabler questions. To fully understand the influence the receipt of more knowledge may have on willingness, the focus should be expanded. Future research should include additional questions about specific training topics such as disaster response activities and risks associated with disaster scenarios and personal preparedness. Analysis would then be able to assess the affect of the response on overall willingness as well as willingness to respond to specific types of

disasters. Investigating specific training topics may provide insight helpful in the development of targeted training materials.

Responses to training related questions in the present study were similar to those in studies among healthcare workers. A majority of respondents believed that disaster related training should be included in nursing degree programs (93.6%, n = 103), the lack of training may reduce willingness to respond (56.4%, n = 62), and receipt of such training may increase their willingness to respond (96.4%, n = 106). In addition to increasing willingness to respond, disaster training may also develop skills helpful in their professional careers.

The *barrier-lack of training*, may contribute to the perception of other barriers, thereby increasing the total number of perceived barriers (*barrier count*). The statistically significant associations between the *barrier-lack of training*, and the barriers, *personal safety*, *type of disaster*, and *being a student* suggests that reducing the affects of *lack of training* may also reduce the affects of other barriers thereby reducing *barrier count*. This recommendation is supported by the multiple regression model, which revealed that *overall willingness* decreased as the number of perceived barriers increased. Additional research is needed to investigate to what extent the *barrier-lack of training* might contribute to the perception of the other barriers and their relationship with *overall willingness*.

Many researchers have recommended the inclusion of disaster training in nursing degree programs (Markenson, DiMaggio & Redlener, 2005); however, it has yet to occur at many colleges and universities (Weiner et al., 2005). An alternative to adding disaster curricula to nursing degree programs would be to provide detailed information about disaster training opportunities with external disaster organizations (e.g. American Red Cross). Informing students of training opportunities with disaster organizations would also educate students about volunteer opportunities with disaster response organization.

Volunteerism

The majority of respondents agreed that nursing students be encouraged to volunteer; however, very few were pre-registered with a disaster response organization. The discrepancy suggests that students want to help but do not know about volunteer opportunities with response organizations. The positive correlation between overall willingness and the IVs, perceived *moral obligation* and belief that nursing students should be *encouraged to volunteer*, indicates a desire to help; however, correlation analysis did not find a significant relationship between those IVs and being pre-registered with an organization. Simply informing students about disaster volunteerism would not be sufficient to increase pre-registration and volunteerism with a response organization. Schools of nursing should work with local emergency management agencies, healthcare facilities, and disaster response organizations to develop volunteer opportunities for student nurses and develop plans and policies to integrate the group into disaster response activities.

Future Research

The current study provided information on the willingness of nursing student at two universities to respond to a disaster. The study was a first of its kind to investigate willingness among nursing students to respond to both natural and human-caused disasters. The findings should serve as a foundation for future research. While this study provided valuable information on the willingness of nursing students to respond to disasters, additional research is needed.

Research using the methodology in this study should be conducted at other nursing schools to develop a more comprehensive understanding of willingness among a larger population and allow for geographical comparisons. Research at more universities would indicate if the high level of willingness was unique to the two universities in the present study or a commonality among nursing students.

I recommend revising the study's survey to expand questions related to training, as previously described, and adding questions about previous volunteer experience and personal

disaster experience. The questions pertaining to college student specific barriers and motivators to enter the nursing profession should be removed, as they did not provide pertinent information. Removing those questions would allow for the expansion of training and volunteer questions without increasing the number of questions in the survey.

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APPENDICES

Appendix 1 – Email Communication with Dr. Connie Madden, University of Utah College of Nursing

Appendix 2 – Email Communication with Dr. Angela Schmidt, Arkansas State University College of Nursing and Health Professions

Appendix 3 - Email Communication with Professor Annette Stacy, Arkansas State University College of Nursing and Health Professions

Appendix 4 - Email Communication with Dr. Paige Wimberley, Arkansas State University College of Nursing and Health Professions

Appendix 5 – Informed Consent

Appendix 6 - Survey Instrument

Appendix 7 – Informed Consent and Survey Instrument from Survey Monkey

Appendix 8 – IRB Approval with Informed Consent and Participant Email Letters (two week, four week, and final)

Appendix 9 – Codebook

Appendix 1 – Email Communication with Dr. Connie Madden, University of Utah College of Nursing

Karen Blackwood

From: Connie Madden <Connie.Madden@nurs.utah.edu>
Sent: Monday, January 18, 2016 3:13 PM
To: Karen Blackwood
Subject: RE: Blackwood dissertation

Karen, You have my permission to distribute your research survey to undergraduate nursing students.
Connie Madden

Connie Madden
Assistant Dean for the Baccalaureate Program
801-585-2588
connie.madden@nurs.utah.edu

Annette Poulson Cumming Building
10 South 2000 East 4670B
Salt Lake City, UT 84112-

From: Karen Blackwood [Karen.Blackwood@imail.org]
Sent: Monday, January 18, 2016 2:47 PM
To: Connie Madden
Subject: RE: Blackwood dissertation

Dr. Madden:

I believe I have finalized my dissertation research survey, see attached. I look forward to your feedback on the survey. I am completing the IRB Application and realized that I need an email from your indicating that you agree to distribute my research survey. Please reply to this email granting me permission to conduct my research among U of U undergraduate nursing students. Thank you in advance for your assistance.

Respectfully,

Karen Blackwood, MS, MPA, CEM
Director
Intermountain Center for Disaster Preparedness
Office: 801-408-7060
Mobile: 801-520-7588
Email: karen.blackwood@imail.org

-----Original Message-----
From: Connie Madden [mailto:Connie.Madden@nurs.utah.edu]
Sent: Monday, January 04, 2016 10:38 AM
To: Karen Blackwood <Karen.Blackwood@imail.org>
Cc: Margaret Clayton <Margaret.Clayton@nurs.utah.edu>
Subject: RE: Blackwood dissertation

Appendix 1 – Email Communication with Dr. Connie Madden, University of Utah College of Nursing

Hi Karen, I look forward to seeing your survey!
Connie

-----Original Message-----
From: Margaret Clayton
Sent: Monday, January 04, 2016 10:32 AM
To: Karen Blackwood
Cc: Connie Madden
Subject: RE: Blackwood dissertation

Hi Karen
Thanks for the update. I am glad things are progressing for you.
Once I receive your survey I am going to send it to Connie Madden. She is the Assistant Dean for the Undergraduate program (since this is now your sample rather than PhD and/or DNP students). I am the Assistant Dean for the PhD program and cannot give permission to send the survey to undergrads, but Connie can (copied on this note).
Sounds like an interesting bit of research. I look forward to seeing your materials!
Mardie

Dr. Margaret (Mardie) F. Clayton PhD APRN-BC Associate Professor; College of Nursing Assistant Dean for the PhD Program Auxiliary Faculty Member; Department of Communication University of Utah
10 South 2000 East
Salt Lake City UT 84112
Phone 801-585-5372
Fax 801-587-9838

-----Original Message-----
From: Karen Blackwood [mailto:Karen.Blackwood@imail.org]
Sent: Monday, January 04, 2016 10:10 AM
To: Margaret Clayton <Margaret.Clayton@nurs.utah.edu>
Subject: RE: Blackwood dissertation

Mardie:

I wanted to provide an update on my dissertation research that I will be conducting at U of U CoN. I am finishing my proposal and expect to be able to collect data through the online survey during the Spring 2016 semester. I had to narrow down my focus as my original concept was too broad for my committee. I am now looking at the willingness of undergraduate student nurses to respond to /volunteer during disasters. Once I have the survey instrument finalized, I will forward it to you for your review. Please let me know if you have any questions. Thank you.

Respectfully,

Karen Blackwood, MS, MPA, CEM
Director
Intermountain Center for Disaster Preparedness
Office: 801-408-7060
Mobile: 801-520-7588
Email: karen.blackwood@imail.org

-----Original Message-----
From: Margaret Clayton [mailto:Margaret.Clayton@nurs.utah.edu]

2

Appendix 2 – Email Communication with Dr. Angela Schmidt, Arkansas State University College of Nursing and Health Professions

Karen Blackwood

From: Angela Schmidt <aschmidt@astate.edu>
Sent: Thursday, December 03, 2015 7:50 PM
To: Deborah Persell; Karen Blackwood
Subject: RE: Introductions

Follow Up Flag: Follow up
Flag Status: Completed

Hi Karen, Let me know how we might assist you.

Angela Stone Schmidt, PhD, MNSc, RNP, RN Associate Dean College of Nursing and Health Professions School of Nursing
Arkansas State University aschmidt@astate.edu
870-972-30374

From: Deborah Persell
Sent: Thursday, December 03, 2015 3:11 PM
To: Angela Schmidt; Karen Blackwood
Subject: Introductions

Angie and Karen, I am taking this opportunity to introduce the two of you. Karen is about to embark on het dissertation and would like A-State School of Nursing to allow her to survey undergraduate students. So, with introductions made, I will let you two take it from here.

Sent from my iPhone

1

Appendix 3 - Email Communication with Professor Annette Stacy, Arkansas State University College of Nursing and Health Professions

Karen Blackwood

From:	ANNETTE STACY <astacy@astate.edu>
Sent:	Wednesday, January 13, 2016 7:54 PM
To:	Karen Blackwood; Renee S. Miller; PAIGE D. WIMBERLEY
Cc:	Angela Schmidt
Subject:	Re: Blackwood dissertation research request

Karen
I am forwarding your email to Dr. Paige Wimberley. I spoke with her today about your research study. She is teaching the undergraduate research class this spring and will be happy to assist you with this.
Good luck to you.
Annette Stacy

On 1/11/16, 11:48 AM, "Karen Blackwood" <Karen.Blackwood@imail.org> wrote:

>Professor Stacy and Professor Miller:
>
>I am following up on my request to conduct my dissertation research
>among undergraduate nursing students at Arkansas State University
>College of Nursing and Health Professions. The research study examines
>willingness of student nurses to respond to disaster. I am finalizing
>my dissertation proposal and need information about the ASTATE
>undergraduate nursing program. Please let me know if you will allow me
>to conduct this survey among your students. Thank you.
>
>
>Respectfully,
>
>Karen Blackwood, MS, MPA, CEM
>Director
>Intermountain Center for Disaster Preparedness
>Office: 801-408-7060
>Mobile: 801-520-7588
>Email: karen.blackwood@imail.org
>
>
>
>-----Original Message-----
>From: Karen Blackwood
>Sent: Wednesday, December 30, 2015 10:15 AM
>To: astacy@astate.edu; rsmiller@astate.edu
>Cc: aschmidt@astate.edu
>Subject: RE: Introductions
>
>Professor Stacy and Professor Miller:
>
>I wanted to follow up on my previous email. I am completing a PhD in
>Fire and Emergency Management Administration at Oklahoma State
>University and am currently developing my dissertation proposal. My

1

Appendix 3 - Email Communication with Professor Annette Stacy, Arkansas State University College of Nursing and Health Professions

>research study will examine willingness of nursing students to respond
>to disasters and factors that influence willingness. I would like to
>conduct my research on undergraduate nursing students at Arkansas State
>University. Please let me know if you will allow me to conduct this
>research among your students. I must include the location of the study in my proposal.
>
>The data will be collected via an online survey. Once I have Oklahoma
>State University IRB approval, I would send you an email with a link to
>the survey which you would forward to your students. I would not need
>student contact information.
>
>Please let me know if you have any questions or concerns or would like
>to discuss this project. Also, please let me know if I have your
>approval to conduct the research among your students. Thank you for
>your assistance.
>
>Respectfully,
>
>Karen Blackwood, MS, MPA, CEM
>Director
>Intermountain Center for Disaster Preparedness
>Office: 801-408-7060
>Mobile: 801-520-7588
>Email: karen.blackwood@imail.org
>
>
>
>-----Original Message-----
>From: Karen Blackwood
>Sent: Tuesday, December 15, 2015 10:16 AM
>To: astacy@astate.edu; rsmiller@astate.edu
>Cc: aschmidt@astate.edu
>Subject: FW: Introductions
>
>Professor Stacy and Professor Miller:
>
>I am currently writing my dissertation proposal examining willingness
>to student nurses to respond to disasters. I am conducting my research
>at the University of Utah College of Nursing and would like to also
>conduct this research at Arkansas State University College of Nursing.
>I am targeting undergraduate students for my study. By conducting the
>research at two universities, I would be able to compare willingness to
>respond among different population groups. Arkansas State is unique in
>that it offers many different disaster courses to nursing students.
>This would provide insight into a specific variable in my study,
>disaster training and education.
>
>I am currently developing the survey instrument and would be happy to
>provide any information you need in order to help you understand this
>research project. The survey will be online and I will provide a link
>which could be distributed to your students. I will be submitting an
>application through the IRB at Oklahoma State University and can

2

Appendix 4 - Email Communication with Dr. Paige Wimberley, Arkansas State University College of Nursing and Health Professions

Karen Blackwood

From: PAIGE D. WIMBERLEY <pwimberley@astate.edu>
Sent: Monday, January 18, 2016 4:17 PM
To: Karen Blackwood
Subject: RE: Blackwood dissertation research request

Ms. Blackwood,

I am so excited that you reached out to ASU. I will be happy to distribute your survey to the undergraduate nursing students. Although their participation in the survey will not be required, we will discuss the professional importance of participating in research.

Paige Wimberley, Ph.D., APN, CNS, CNE
Associate Professor of Nursing
Arkansas State University-Jonesboro, AR

Mailing address:
PO Box 910
State University, AR 72467

From: Karen Blackwood [Karen.Blackwood@imail.org]
Sent: Monday, January 18, 2016 3:49 PM
To: PAIGE D. WIMBERLEY
Subject: RE: Blackwood dissertation research request

Dr. Wimberely:

I believe I have finalized my dissertation research survey, see attached. I look forward to your feedback on the survey. I am completing the IRB Application and realized that I need an email from your indicating that you agree to distribute my research survey. Please reply to this email granting me permission to conduct my research among undergraduate nursing students enrolled in the Introduction to Nursing Research course. Thank you in advance for your assistance.

Respectfully,

Karen Blackwood, MS, MPA, CEM
Director
Intermountain Center for Disaster Preparedness
Office: 801-408-7060
Mobile: 801-520-7588
Email: karen.blackwood@imail.org

-----Original Message-----
From: PAIGE D. WIMBERLEY [mailto:pwimberley@astate.edu]
Sent: Thursday, January 14, 2016 9:29 AM
To: Karen Blackwood <Karen.Blackwood@imail.org>
Subject: Re: Blackwood dissertation research request

Great either will be fine. If you want to Skype let me know.

1

Appendix 4 - Email Communication with Dr. Paige Wimberley, Arkansas State University College of Nursing and Health Professions

Sent from my HTC

----- Reply message -----
From: "Karen Blackwood" <Karen.Blackwood@imail.org>
To: "PAIGE D. WIMBERLEY" <pwimberley@astate.edu>
Subject: Blackwood dissertation research request
Date: Thu, Jan 14, 2016 10:19 AM

Dr. Wimberley:

Thank you very much for agreeing to assist me with my dissertation research study. Would it be okay to call you tomorrow at 11:00 AM (CST)? I can also skype with you to discuss the project if you would like. I look forward to talking with you tomorrow.

Karen Blackwood

From: PAIGE D. WIMBERLEY [pwimberley@astate.edu]
Sent: Thursday, January 14, 2016 7:44 AM
To: Karen Blackwood
Subject: RE: Blackwood dissertation research request

Karen,

Feel free to call me at 870-972-3231(office) or 870-588-6995 (cell). I will be in meetings today (1/14) until after 4 pm. However, I will be available in my office most of the day Friday and always on my cell after 4 pm today. I would love to discuss this with you.

Thank you
Paige Wimberley,

-----Original Message-----
From: ANNETTE STACY
Sent: Wednesday, January 13, 2016 8:54 PM
To: Karen Blackwood <Karen.Blackwood@imail.org>; Renee S. Miller <rsmiller@astate.edu>; PAIGE D. WIMBERLEY <pwimberley@astate.edu>
Cc: Angela Schmidt <aschmidt@astate.edu>
Subject: Re: Blackwood dissertation research request

Karen
I am forwarding your email to Dr. Paige Wimberley. I spoke with her today about your research study. She is teaching the undergraduate research class this spring and will be happy to assist you with this.
Good luck to you.
Annette Stacy

On 1/11/16, 11:48 AM, "Karen Blackwood" <Karen.Blackwood@imail.org> wrote:

>Professor Stacy and Professor Miller:
>
>I am following up on my request to conduct my dissertation research
>among undergraduate nursing students at Arkansas State University
>College of Nursing and Health Professions. The research study examines

2

ADULT CONSENT FORM

OKLAHOMA STATE UNIVERSITY

PROJECT TITLE: Factors that Affect Nursing Students' Willingness to Respond to Disasters

INVESTIGATORS:
Karen Blackwood,
Masters of Science, Jacksonville State University
Masters of Public Administration, Troy State University
Bachelors of Art, University of West Florida

PURPOSE:
This research study will examine the willingness of undergraduate nursing students to help during disasters. This study also examines factors that may affect student nurses' willingness to respond.

PROCEDURES
You will be asked to complete a survey consisting of twenty-four questions. The survey is designed to take approximately 20 minutes to complete.

RISKS OF PARTICIPATION:
There are no known risks associated with this project, which are greater than those ordinarily encountered in daily life.

BENEFITS OF PARTICIPATION:
There are no expected personal benefits to individuals participating in this study. Your participation will contribute to the expansion of knowledge about the participation of student nurses in future disasters. If you are interested, we will send you a copy of the results of the study when it is finished.

CONFIDENTIALITY:
To ensure confidentiality, the survey used in this research study will not collect any personally identifiable information. This ensures the anonymity of respondents. The data collected in this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research data will be stored on a password protected computer and only researchers and individuals responsible for research oversight will have access to the records.

COMPENSATION:
No compensation is offered for your participation in this research study.

CONTACTS:
You may contact me at the following address and phone number, should you desire to discuss your participation in the study and/or request information about the results of the

study: Karen Blackwood, Karen.blackwood@okstate.edu, 901-451-4148. You may also contact my dissertation committee chair, Professor Dave Neal at dave.neal@okstate.edu. If you have

questions about your rights as a research volunteer, you may contact the IRB Office at 223 Scott Hall, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

PARTICIPANT RIGHTS:
I understand that my participation is voluntary; that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time, without penalty.

CONSENT DOCUMENTATION:
I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the benefits of my participation. I also understand the following statements:
I affirm that I am 18 years of age or older.

I understand the information presented in the research invitation letter and that my participation is voluntary. I may decline to participate or discontinue participation at any time prior to submitting my survey responses. Once I begin the survey, I can discontinue my participation by clicking the 'Exit this survey' button in the top right corner of the survey. My refusal to participate or discontinuation will not result in any penalty.

□ Yes, I give my consent to be a subject of your research and agree to participate in this study.

□ No, I do not give my consent to participate in your research nor do I agree to participate in this study.

Appendix 6 – Survey Instrument

FACTORS THAT AFFECT NURSING STUDENTS' WILLINGNESS TO RESPOND TO DISASTERS

QUESTIONNAIRE

---

1. **In this question, *willingness to respond* refers *to a personal decision to respond to a disaster*. On a scale of 5 (very willing) to 1 (not at all willing), rate your level of willingness to respond to support a healthcare or disaster response organization during:** (adapted from Burke et al., 2010)

    a. **A natural disaster (e.g., earthquake, tornado)**

Completely willing to respond 5	Somewhat willing to respond 4	Uncertain 3	Somewhat unwilling to respond 2	Not at all willing to respond 1

    b. **A human-caused disaster (e.g., terrorist attack, hazardous material release)**

Completely willing to respond 5	Somewhat willing to respond 4	Uncertain 3	Somewhat unwilling to respond 2	Not at all willing to respond 1

2. **In this question, *willing to provide support* refers *to a personal decision to respond to a disaster*. On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.** (adapted from Burke et al., 2010)

    a. **I am willing to provide support to a healthcare or disaster response organization during a natural disaster, such as a tornado or earthquake.**

Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1

    b. **I am willing to provide support to a healthcare or disaster response organization during a human-caused disaster, such as a terrorist attack.**

Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1

3. Please indicate whether you would be willing to perform any of the following activities in response to a disaster. (adapted from Rosychuk et al., 2008; Yonge et al., 2010)

	Yes	**No**	**Not Sure**
Feed patients			
Serve refreshments to staff			
Provide childcare for hospital workers			
Basic clinical support (e.g., taking vital signs)			
Clinical care (e.g., triage and treatment)			
Provide emotional comfort or support			
Answer telephones or other administrative support			
Whatever tasks need to be done			
Other: *(Identify any other activities you would be willing to perform)* _____ _____ _____ _____			

4. In this question, *moral obligation* refers to *an individual's personal belief that he or she has a responsibility to help others who are in need*. On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement. *(definition adapted from Piliavin and Charng, 1990)*

Student nurses have a moral obligation to respond during a disaster to help others. (adapted from Rosychuk et al., 2008; Yonge et al., 2010)

Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1

5. In this question, *motivation to enter the nursing profession* refers to *the reason(s) why an individual decides to pursue a career in nursing*.

Please indicate if the following factors influenced your motivation to enter the nursing profession. (adapted from Gambino, 2010)

	Yes	**No**	**Not Sure**
I want to be a nurse because I have a calling.			
I want to be a nurse because I want to help others cope with illness.			
I want to be a nurse because I want to help people.			
I want to be a nurse because nursing gives my life a sense of meaning.			
I want to be a nurse because I want to work in a caring occupation.			
I want to be a nurse because I feel that I can advance in			

the field of healthcare.			
I want to be a nurse because the occupation offers job security.			
I want to be a nurse because I am interested in science.			
I want to be a nurse because the occupation offers job flexibility.			
I want to be a nurse because the flexible educational requirements permit me to finish my schooling quickly.			
I want to be a nurse because I can earn a good salary.			
Other: *(Identify any other factors that influenced your motivation to enter the nursing profession)* _____ _____ _____			

6. **On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.**

   Student nurses should be encouraged to volunteer during a disaster. (adapted from Rosychuk et al., 2008; Yonge et al., 2010)

Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1

7. **Are you presently pre-registered with a volunteer disaster response organization such as, but not limited to, the Medical Reserve Corps or the American Red Cross?**
   ❑ Yes ❑ No

8. **Please indicate if the following items would prevent you from responding to a disaster.** (adapted from Adams & Berry, 2012; Gershon et al., 2010; Qureshi et al., 2005)

	Yes	**No**	**Not Sure**
Fear for my personal safety and well-being			
Fear for the safety and well-being of my family members			
Responsibility for dependent children			
Type of disaster			
Lack of disaster training and education			
Being a nursing student			
Other: *(Identify any other factors that might prevent you from responding to a disaster)* _____ _____ _____			

9. **On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.** (adapted from Qureshi et al., 2005)

   If I responded during a disaster to support a healthcare or disaster response organization, I would be concerned for my personal safety and well-being.

Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1

10. **On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.** (adapted from Qureshi et al., 2005)

    If I responded during a disaster to support a healthcare or disaster response organization, I would be concerned for the safety and well-being of my family.

Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1

11. **Do you have dependent children living in your household who require a caregiver?** (adapted from Adams & Berry, 2012; Gershon et al., 2010; Qureshi et al., 2005)

    ❑ Yes ❑ No

    11a. Please indicate how many dependent children live in your household. (adapted from Adams & Berry, 2012; Gershon et al., 2010; Qureshi et al., 2005)

1	**2**	**3**	**4**	**5**	**6 or more**

11b. Select the age range(s) of the dependent children in your household. Select all that apply.

Under 1 year	1-2 years	3-5 years	6-8 years	9-11 years	12-14 years	15-17 years	18 years and over

11c. Are you the sole guardian of the dependent children? ❑ Yes ❑ No

11d. Do other people care for the dependent children while you are at school or work? ❑ Yes ❑ No

11e. On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement. (adapted from Ogedegbe et al., 2012) **During a disaster, arranging for childcare will be difficult for me.**

Strongly agree 5	Somewhat agree 4	Neither agree nor disagree 3	Somewhat disagree 2	Strongly disagree 1

12. Have you attended formal disaster training course(s) from the university as part of your degree program? (adapted from Whetzel et al., 2013) ❑ Yes ❑ No

12a. Please indicate how many formal disaster training courses you have completed.

1 Course	2 Courses	3 Courses	4 Courses	5 or More Courses

12b. Please provide the title or topic of the formal disaster training course(s) you have completed.

_____

_____

13. Do you believe that disaster training curricula should be required in nursing degree programs? (adapted from Schmidt et al., 2011)

❑ Yes ❑ No

14. Please consider the scenarios below and indicate your willingness to respond to each type of disaster. (adapted from Adams & Berry, 2012; Burke et al., 2010; Cone & Cummings, 2006; Qureshi et al., 2005)

Scenario	**Willing to volunteer**	**Not willing to volunteer**	**Not Sure**
Earthquake: *A 6.5 magnitude occurs at 10:00 AM with the epicenter within 5 miles of your home. Roads and buildings are damaged; electricity is out. Many people are injured or dead while many others are missing.*			
Winter Storm: *A winter storm with 6 inches of snow and 3 inches of ice occurs where you live in a 24-hour period.*			
Tornado: *An F4 tornado has injured hundreds of people in your community*.			
Flood: *Heavy rain has caused significant flooding in your community. Hundreds of residences have been evacuated to shelters.*			
Mass Casualty Incident: *An explosion has occurred at a local oil refinery with 200 people seriously injured and taken to local hospitals.*			
Influenza Pandemic: *There is an outbreak of pandemic influenza in your community with more than 600 reported cases.*			
Infectious Disease Outbreak: *There is an outbreak of SARS in your community with more than 30 patients admitted to local hospitals.*			
Biological Terrorist Event: *There is a smallpox outbreak in your community with 200 patients admitted to local hospitals. The media has reported that a terrorist group is claiming responsibility for intentionally releasing the disease*.			
Chemical Terrorist Event: *There has been a chemical terrorism attack involving release of substance during a football game at the University's football stadium. More than 1,000 victims have been brought to local hospitals.*			
Radiological Terrorist Event: *A radiological bomb has exploded at the local fairground during the annual fair and thousands of people are arriving at local hospitals.*			

15. Please indicate whether the following aspects of being a nursing affects your willingness to respond during a disaster.

	Yes	**No**	**Not Sure**
Heavy course load			
Don't know enough to help			
Not licensed yet			
Not insured for liability			
Have a part-time or full-time job			
Other: *(Identify any other factors related to being a nursing student that might affect your willingness to respond)* _____ _____ _____			

16. Please indicate whether the following items would increase your willingness to respond during a disaster. (adapted from Gershon et al., 2010; Yonge et al., 2010)

	Yes	**No**	**Not Sure**
If vaccines and prophylaxis were available to me.			
If I were provided with appropriate personal protective equipment (PPE).			
If vaccines and prophylaxis were provided to my family members.			
If I knew I would be safe from illness or harm.			
If I knew my family would be safe.			
If I had more knowledge about disaster response.			
If I had access to safe reliable childcare.			
Other: *(Identify any other items that might increase your willingness to respond)* _____ _____ _____			

<u>Demographic Information</u> *(please select a response for each)*

17. Please select the university you currently attend:

❑ Arkansas State University ❑ University of Utah

18. Please indicate your current degree program (select only one):

❑ Associate of Applied Science in Nursing ❑ Bachelor of Science in Nursing

19. Do you currently hold a state issued license in an emergency or healthcare field (i.e., RN, LPN, CNA, Paramedic, EMT) ❑ Yes ❑ No

19a. Please indicate how long you have held the state issued license.

Less than 1 year	1 - 2 years	3 – 5 years	6 – 8 years	9 – 11 years	More than 11 years

19b. Do you currently work in the licensed field? ❑ Yes ❑ No
{Logic command in SurveyMonkey: Yes directed to 18c; No directed to 19}

19c. During a disaster, will your employer expect you to work? ❑ Yes ❑ No

20. **Marital Status:** ❑ Never married
❑ Married
❑ Unmarried partner
❑ Widowed
❑ Divorced

21. **Gender:** ❑ Male ❑ Female

22. **Race:** ❑ White
❑ Black or African American
❑ American Indian or Alaska Native
❑ Asian
❑ Native Hawaiian or Pacific Islander
❑ Hispanic or Latino
❑ Multiethnic
❑ Prefer not to provide

23. **Age:** _____

24. Is there anything else you would like to share about your personal willingness to respond to a disaster as a nursing student?

_____

_____

Appendix 7 – SurveyMonkey Informed Consent and Survey

Informed Consent

ADULT CONSENT FORM
OKLAHOMA STATE UNIVERSITY

PROJECT TITLE: Factors that Affect Nursing Students' Willingness to Respond to Disasters

INVESTIGATORS: Karen Blackwood, Masters of Science, Jacksonville State University; Masters of Public Administration, Troy State University; Bachelors of Art, University of West Florida

PURPOSE: This research study will examine the willingness of undergraduate nursing students to help during disasters. This study also examines factors that may affect student nurses' willingness to respond.

PROCEDURES: You will be asked to complete a survey consisting of thirteen questions. The survey is designed to take approximately 20 minutes to complete.

RISKS OF PARTICIPATION: There are no known risks associated with this project, which are greater than those ordinarily encountered in daily life.

BENEFITS OF PARTICIPATION: There are no expected personal benefits to individuals participating in this study. Your participation will contribute will contribute to the expansion of knowledge about the participation of student nurses in future disasters. If you are interested, we will send you a copy of the results of the study when it is finished.

CONFIDENTIALITY: To ensure confidentiality, the survey used in this research study will not collect any personally identifiable information. This ensures the anonymity of respondents. The data collected in this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research data will be stored on a password protected computer and only researchers and individuals responsible for research oversight will have access to the records.

COMPENSATION: No compensation is offered for your participation in this research study.

CONTACTS: You may contact me at the following address and phone number, should you desire to discuss your participation in the study and/or request information about the results of the study: Karen Blackwood, Karen.blackwood@okstate.edu, 901-451-4148. You may also contact my dissertation committee chair, Professor Dave Neal at dave.neal@okstate.edu. If you have questions about your rights as a research volunteer, you may contact the IRB Office at 223 Scott Hall, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

Appendix 7 – SurveyMonkey Informed Consent and Survey

* **PARTICIPANT RIGHTS:** I understand that my participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time, without penalty.

CONSENT DOCUMENTATION: I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the benefits of my participation. I also understand the following statements:

- I affirm that I am 18 years of age or older.

- I understand the informed consent information presented in this notice and that my participation is voluntary. I may decline to participate or discontinue participation at any time prior to submitting my survey responses. Once I begin the survey, I can discontinue my participation by clicking the 'Exit this survey' button in the top right corner of the survey. My refusal to participate or discontinuation will not result in any penalty.

◯ Yes, I give my consent to be a subject of your research and agree to participate in this study.

◯ No, I do not give my consent to participate in your research nor do I agree to participate in this study.

Appendix 7 – SurveyMonkey Informed Consent and Survey

1. In this question, *willingness to respond* refers to *a personal decision to respond to a disaster.* On a scale of 5 (very willing) to 1 (not at all willing), rate your level of willingness to respond to support a healthcare or disaster response organization during:

a. A natural disaster (e.g. earthquake, tornado)

5-Completely willing to respond	4-Somewhat willing to respond	3-Uncertain	2-Somewhat unwilling to respond	1-Not at all willing to respond
○	○	○	○	○

b. A human-caused disaster (e.g. terrorist attack, hazardous material release)

5-Completely willing to respond	4-Somewhat willing to respond	3-Uncertain	2-Somewhat unwilling to respond	1-Not at all willing to respond
○	○	○	○	○

2. In this question, *willing to provide support* refers to *a personal decision to respond to a disaster.* On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.

a. I am willing to provide support to a healthcare or disaster response organization during a natural disaster, such as a tornado or earthquake.

5-Strongly agree	4-Somewhat agree	3-Neither agree nor disagree	2-Somewhat disagree	1-Strongly disagree
○	○	○	○	○

b. I am willing to provide support to a healthcare or disaster response organization during a human-caused disaster, such as a terrorist attack.

5-Strongly agree	4-Somewhat agree	3-Neither agree nor disagree	2-Somewhat disagree	1-Strongly disagree
○	○	○	○	○

3. Please indicate whether you would be willing to perform any of the following activities in response to a disaster.

	Yes	No	Not Sure
Feed patients	○	○	○
Serve refreshments to staff	○	○	○
Provide childcare for hospital workers	○	○	○
Basic clinical support (e.g., taking vital signs)	○	○	○
Clinical care (e.g., triage and treatment)	○	○	○
Provide emotional comfort or support	○	○	○
Answer telephones or other administrative support	○	○	○
Whatever tasks need to be done	○	○	○

Other (Identify any other activities you would be willing to perform)

4. In this question, *moral obligation* refers to *an individual's personal belief that he or she has a responsibility to help others who are in need*. On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.

Student nurses have a moral obligation to respond during a disaster to help others.

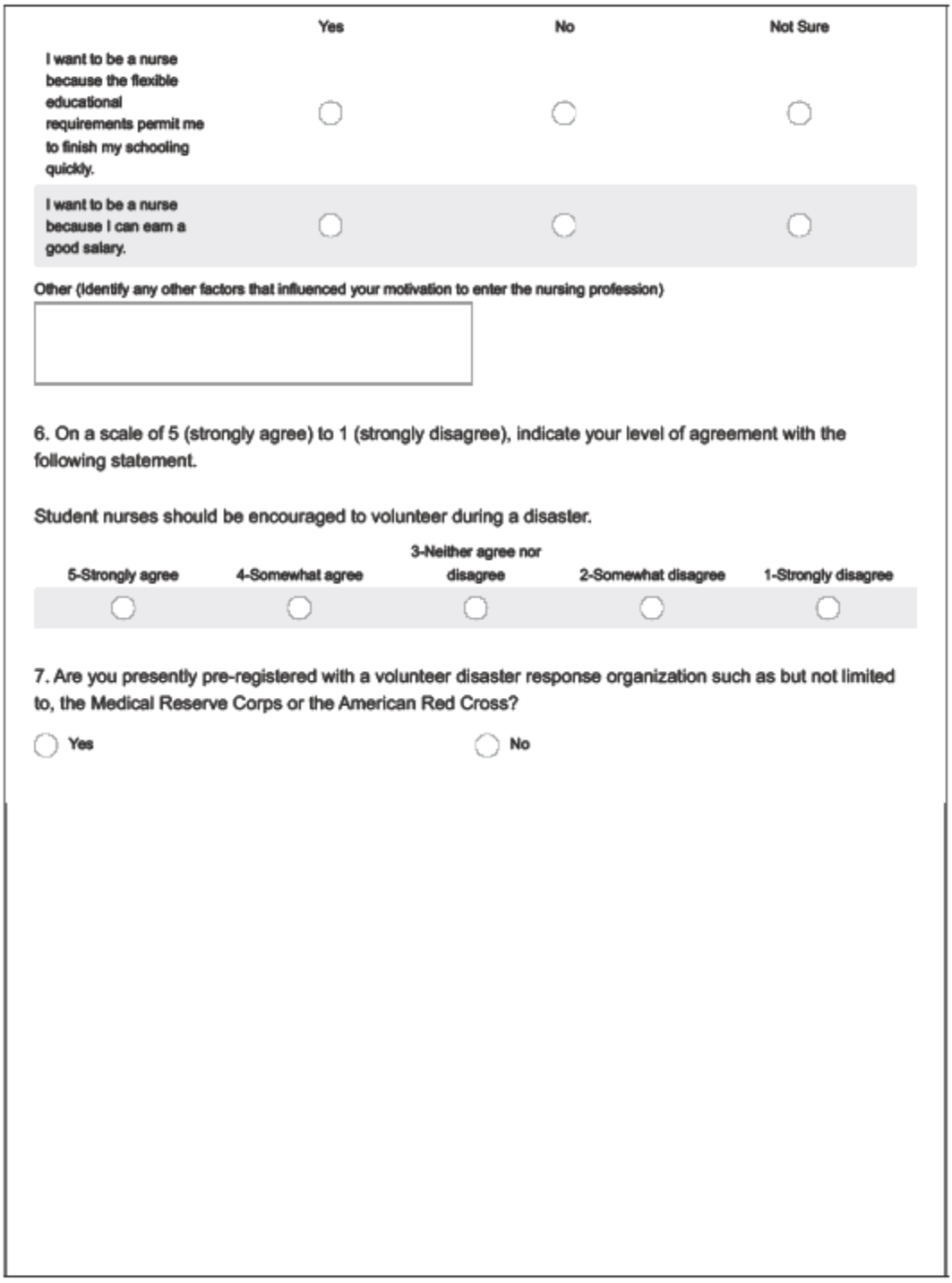
5-Strongly agree	4-Somewhat agree	3-Neither agree nor disagree	2-Somewhat disagree	1-Strongly disagree
○	○	○	○	○

5. In this question, motivation to enter the nursing profession refers to the reason(s) why an individual decides to pursue a career in nursing.

Please indicate if the following factors influenced your motivation to enter the nursing profession.

	Yes	No	Not Sure
I want to be a nurse because I have a calling.	○	○	○
I want to be a nurse because I want to help others cope with illness.	○	○	○
I want to be a nurse because I want to help people.	○	○	○
I want to be a nurse because nursing gives my life a sense of meaning.	○	○	○
I want to be a nurse because I want to work in a caring occupation.	○	○	○
I want to be a nurse because I feel that I can advance in the field of healthcare.	○	○	○
I want to be a nurse because the occupation offers job security.	○	○	○
I want to be a nurse because I am interested in science.	○	○	○
I want to be a nurse because the occupation offers job flexibility.	○	○	○

Appendix 7 – SurveyMonkey Informed Consent and Survey



	Yes	No	Not Sure
I want to be a nurse because the flexible educational requirements permit me to finish my schooling quickly.	○	○	○
I want to be a nurse because I can earn a good salary.	○	○	○

Other (identify any other factors that influenced your motivation to enter the nursing profession)

6. On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.

Student nurses should be encouraged to volunteer during a disaster.

5-Strongly agree	4-Somewhat agree	3-Neither agree nor disagree	2-Somewhat disagree	1-Strongly disagree
○	○	○	○	○

7. Are you presently pre-registered with a volunteer disaster response organization such as but not limited to, the Medical Reserve Corps or the American Red Cross?

○ Yes ○ No

8. Please indicate if the following items would prevent you from responding to a disaster.

	Yes	No	Not Sure
Fear for my personal safety and well-being	○	○	○
Fear for the safety and well-being of my family members	○	○	○
Responsibility for dependent children	○	○	○
Type of disaster	○	○	○
Lack of disaster training and education	○	○	○
Being a nursing student	○	○	○

Other (Identify any other activities you would be willing to perform)

9. On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.

If I responded to support a healthcare or disaster response organization during a disaster, I would be concerned for my personal safety and well-being.

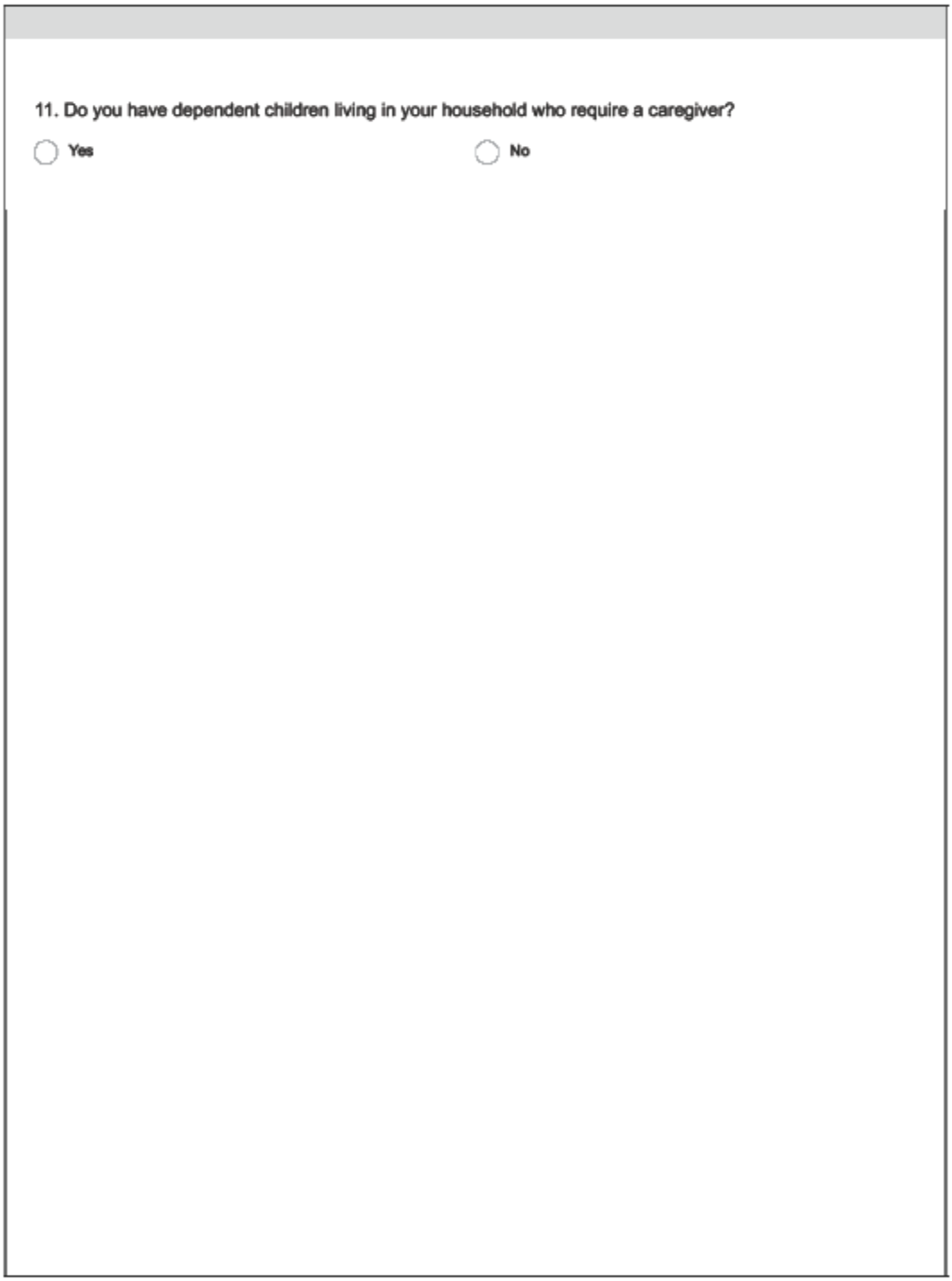
5-Strongly agree	4-Somewhat agree	3-Neither agree nor disagree	2-Somewhat disagree	1-Strongly disagree
○	○	○	○	○

10. On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.

If I responded to support a healthcare or disaster response organization during a disaster, I would be concerned for the safety and well-being of my family.

5-Strongly agree	4-Somewhat agree	3-Neither agree nor disagree	2-Somewhat disagree	1-Strongly disagree
○	○	○	○	○

Appendix 7 – SurveyMonkey Informed Consent and Survey



11a. Please indicate how many dependent children live in your household.

	1	2	3	4	5	6 or more
Number of children	○	○	○	○	○	○

11b. Select the age range(s) of the dependent children in your household. Select all that apply.

	Under 1 year	1 - 2 years	3 - 5 years	6 - 8 years	9 - 11 years	12 - 14 years	15 - 17 years	18 years or over
Children age	☐	☐	☐	☐	☐	☐	☐	☐

11c. Are you the sole guardian of the dependent children?

○ Yes ○ No

11d. Do other people care for the dependent children while you are at school or work?

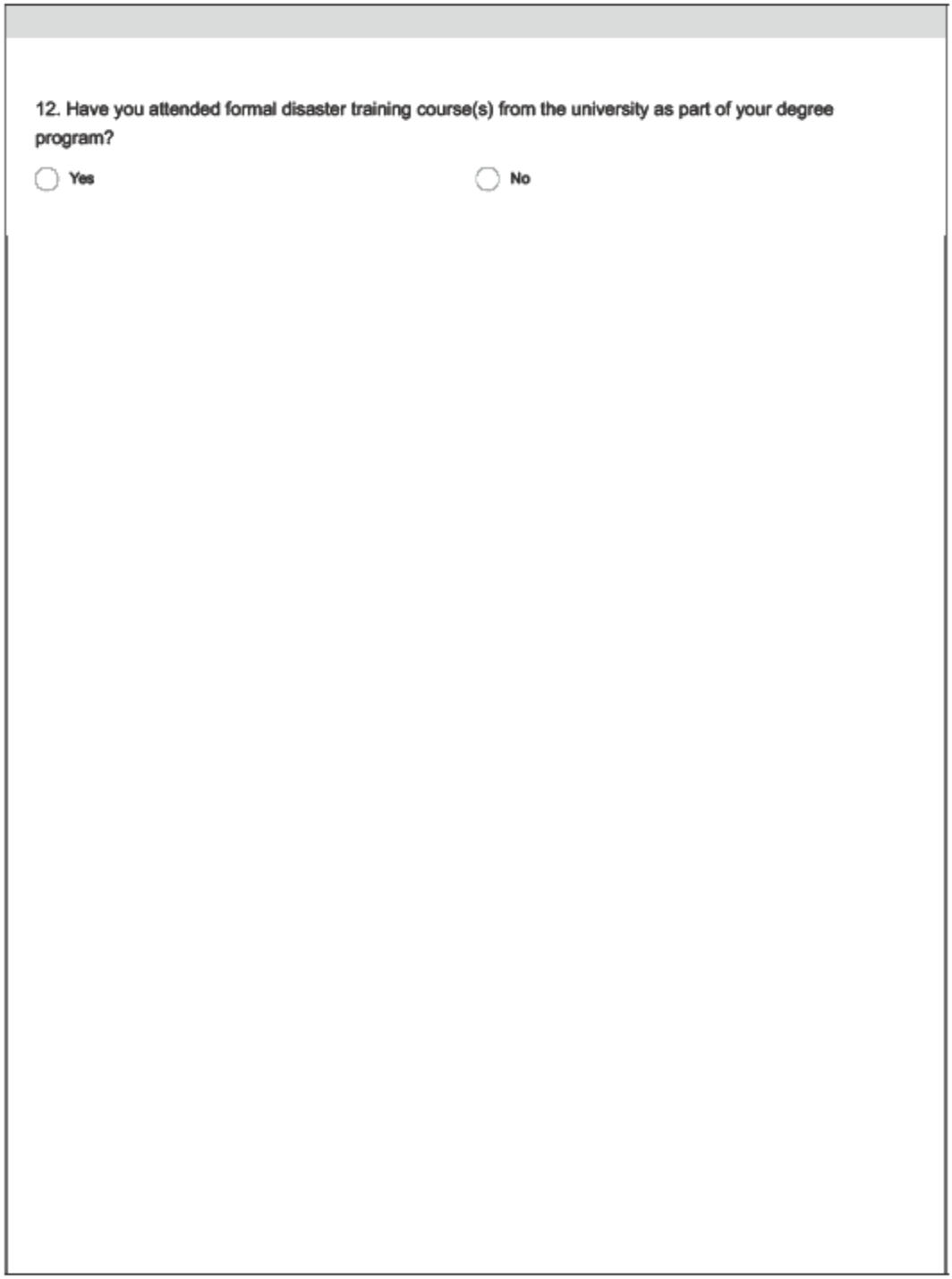
○ Yes ○ No

11e. On a scale of 5 (strongly agree) to 1 (strongly disagree), indicate your level of agreement with the following statement.

During a disaster, arranging for childcare will be difficult for me.

5-Strongly agree	4-Somewhat agree	3-Neither agree nor disagree	2-Somewhat disagree	1-Strongly disagree
○	○	○	○	○

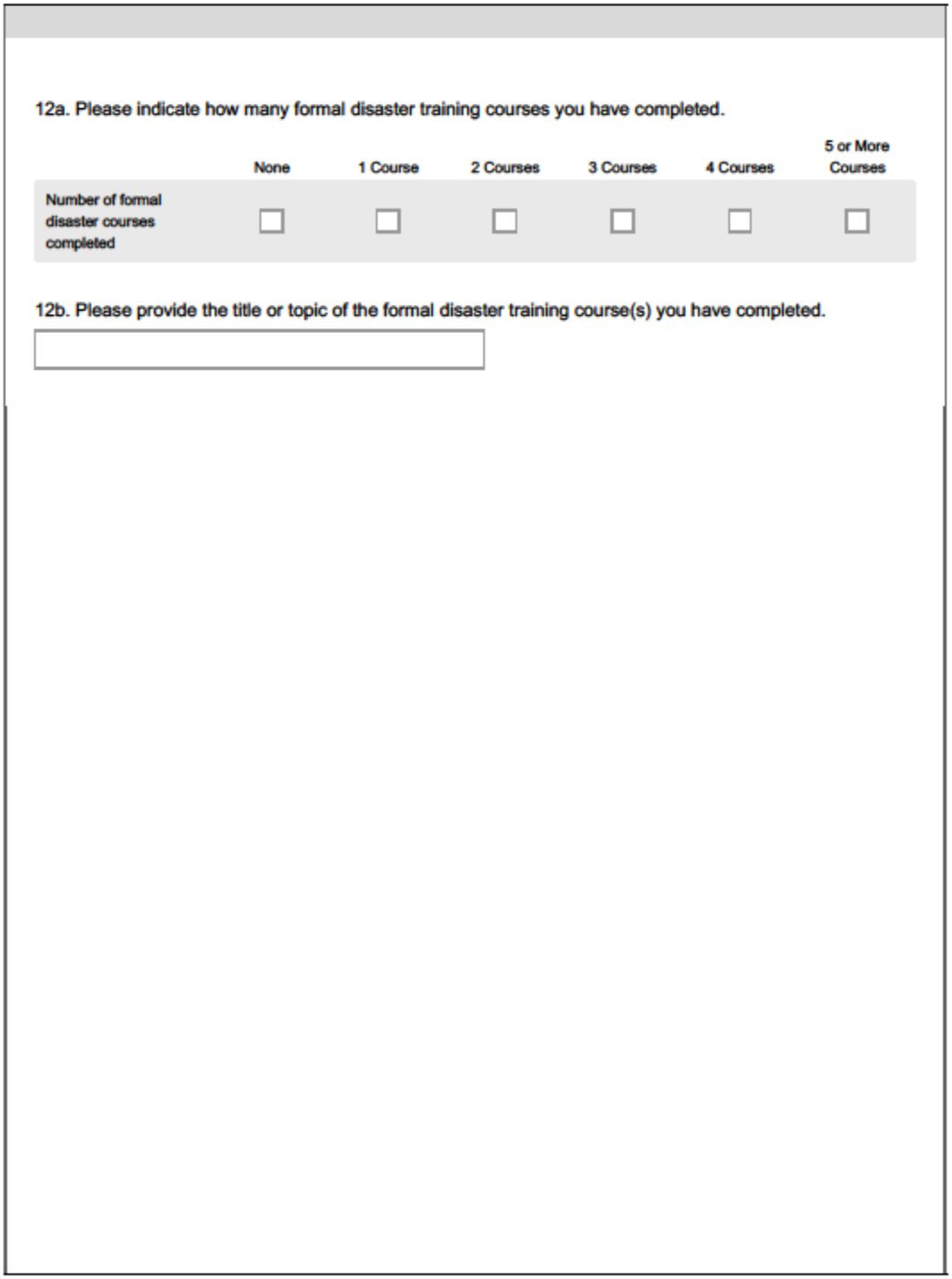
Appendix 7 – SurveyMonkey Informed Consent and Survey



12. Have you attended formal disaster training course(s) from the university as part of your degree program?

- ◯ Yes
- ◯ No

Appendix 7 – SurveyMonkey Informed Consent and Survey



12a. Please indicate how many formal disaster training courses you have completed.

	None	1 Course	2 Courses	3 Courses	4 Courses	5 or More Courses
Number of formal disaster courses completed	☐	☐	☐	☐	☐	☐

12b. Please provide the title or topic of the formal disaster training course(s) you have completed.

13. Do you believe that disaster training curricula should be required in nursing degree programs?

◯ Yes ◯ No

14. Please consider the scenarios below and indicate your willingness to respond to each type of disaster.

	Yes	No	Not Sure
Earthquake: *A 6.5 magnitude occurs at 10:00 AM with the epicenter within 5 miles of your home. Roads and buildings are damaged; electricity is out. Many people are injured or dead while many others are missing.*	◯	◯	◯
Winter Storm: *A winter storm with 6 inches of snow and 3 inches of ice occurs where you live in a 24-hour period.*	◯	◯	◯
Tornado: *An F4 tornado has injured hundreds of people in your community.*	◯	◯	◯
Flood: *Heavy rain has caused significant flooding in your community. Hundreds of residences have been evacuated to shelters.*	◯	◯	◯
Mass Casualty Incident: *An explosion has occurred at a local oil refinery with 200 people seriously injured and taken to local hospitals.*	◯	◯	◯
Influenza Pandemic: *There is an outbreak of pandemic influenza in your community with more than 600 reported cases.*	◯	◯	◯

Appendix 7 – SurveyMonkey Informed Consent and Survey

	Yes	No	Not Sure
Infectious Disease Outbreak: *There is an outbreak of SARS in your community with more than 30 patients admitted to local hospitals.*	○	○	○
Biological Terrorist Event: *There is a smallpox outbreak in your community with 200 patients admitted to local hospitals. The media has reported that a terrorist group is claiming responsibility for intentionally releasing the disease.*	○	○	○
Chemical Terrorist Event: *There has been a chemical terrorism attack involving release of substance during a football game at the University's football stadium. More than 1,000 victims have been brought to local hospitals.*	○	○	○
Radiological Terrorist Event – *A radiological bomb has exploded at the local fairground during the annual fair and thousands of people are arriving at local hospitals.*	○	○	○

15. Please indicate whether the following aspects of being a nursing student affects your willingness to respond during a disaster.

	Yes	No	Not Sure
Heavy course load	○	○	○
Don't know enough to help	○	○	○
Not licensed yet	○	○	○
Not insured for liability	○	○	○
Have a part-time or full-time job	○	○	○

Other: (Identify any other factors related to being a nursing student that might affect your willingness to respond)

16. Please indicate whether the following items would increase your willingness to respond during a disaster.

	Yes	No	Not Sure
If vaccines and prophylaxis were available to me	○	○	○
If I were provided with appropriate personal protective equipment (PPE)	○	○	○
If vaccines and prophylaxis were provided to my family members	○	○	○
If I knew I would be safe from illness or harm	○	○	○
If I knew my family would be safe	○	○	○
If I had more knowledge about disaster response	○	○	○
If I had access to safe reliable childcare	○	○	○
If I had access to safe reliable pet care	○	○	○

Other: (Identify any other items that might increase your willingness to respond)

Appendix 7 – SurveyMonkey Informed Consent and Survey

Demographic Information

17. Please select the University you current attend:

- ◯ Arkansas State University
- ◯ University of Utah

18. Please indicate the degree level you are currently pursuing.

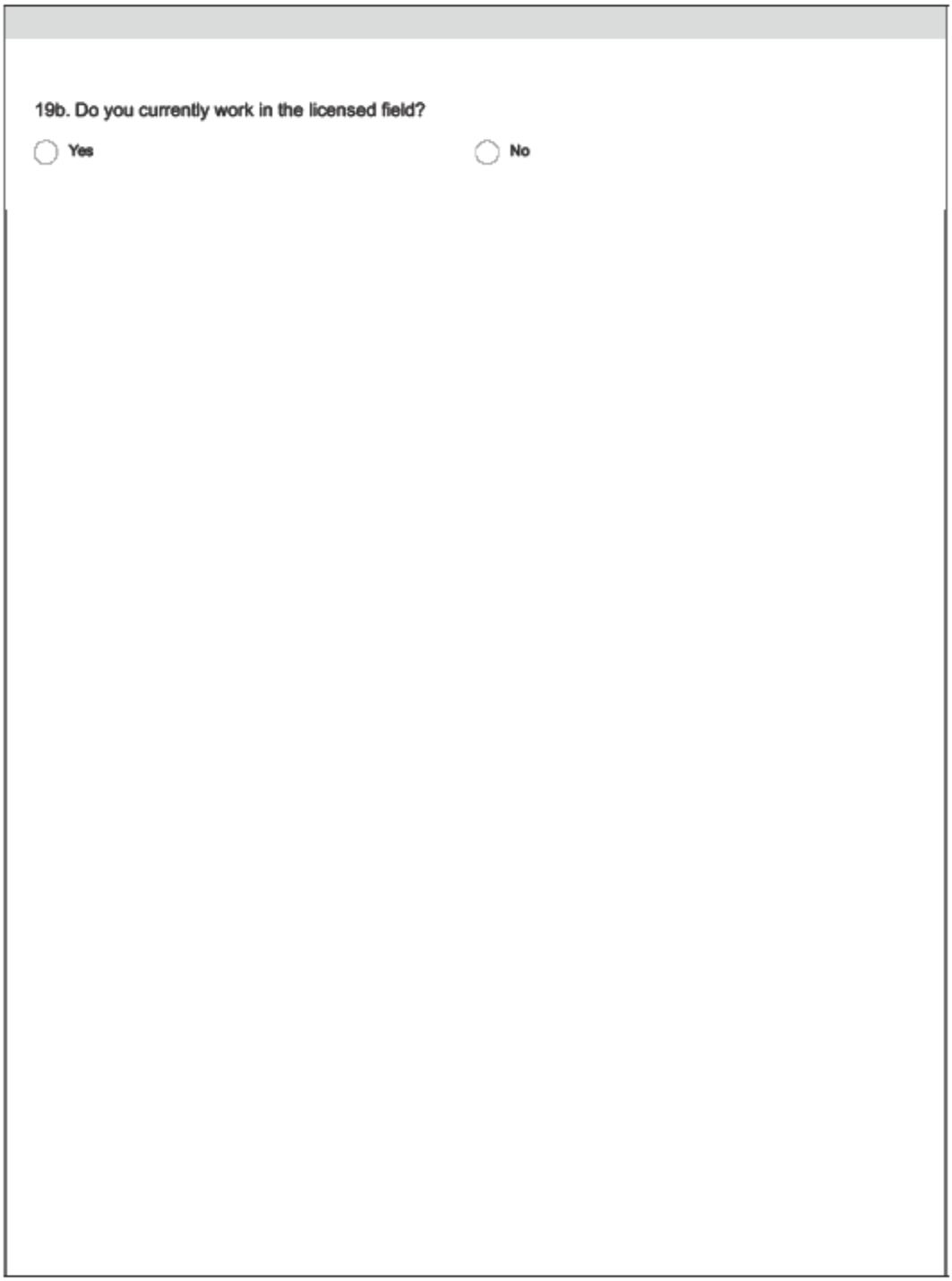
- ◯ Associate of Applied Science in Nursing
- ◯ Bachelor of Science in Nursing

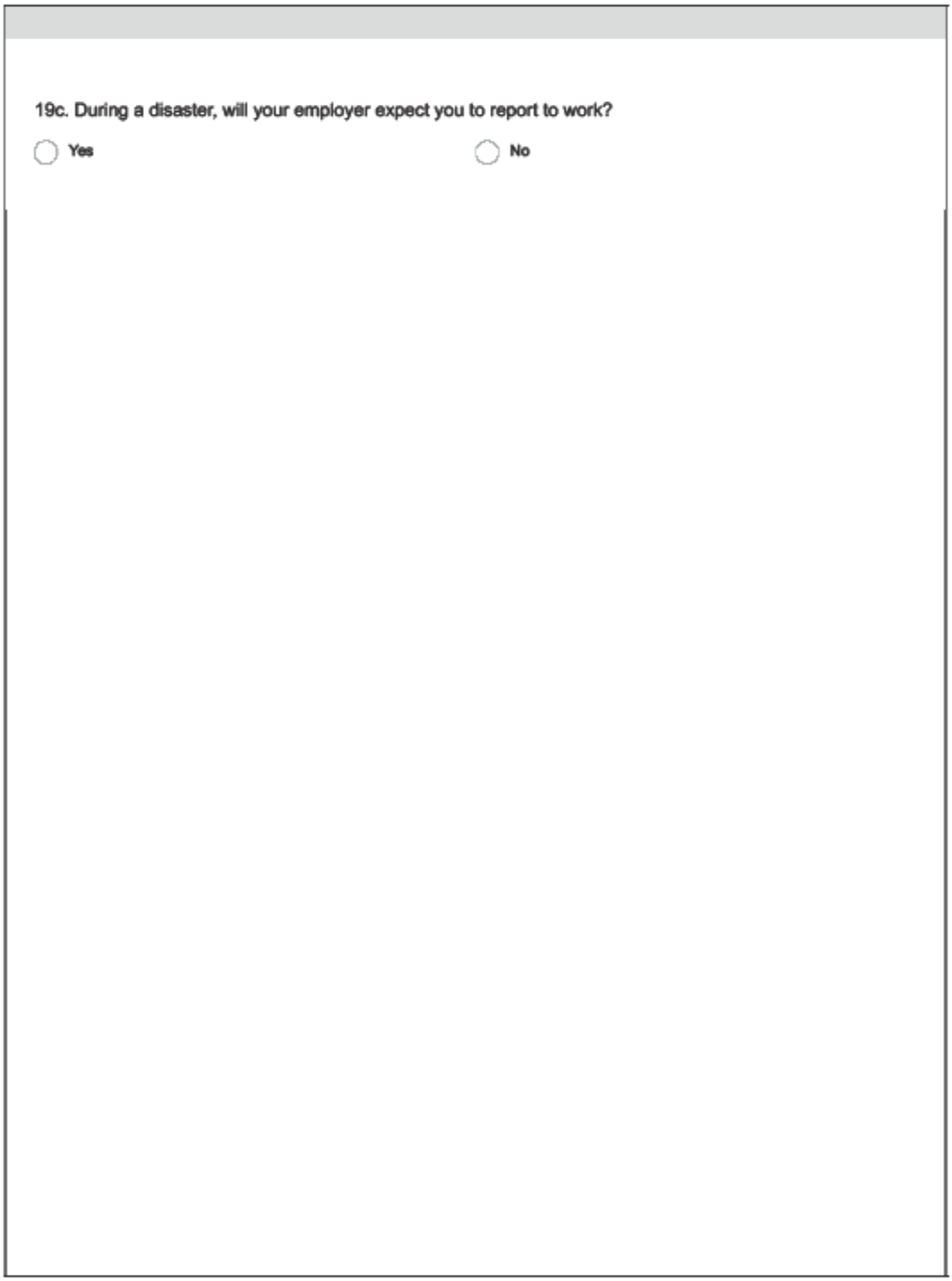
19. Do you currently hold a state issued license in an emergency or healthcare field (i.e., RN, LPN, CNA, Paramedic, EMT)

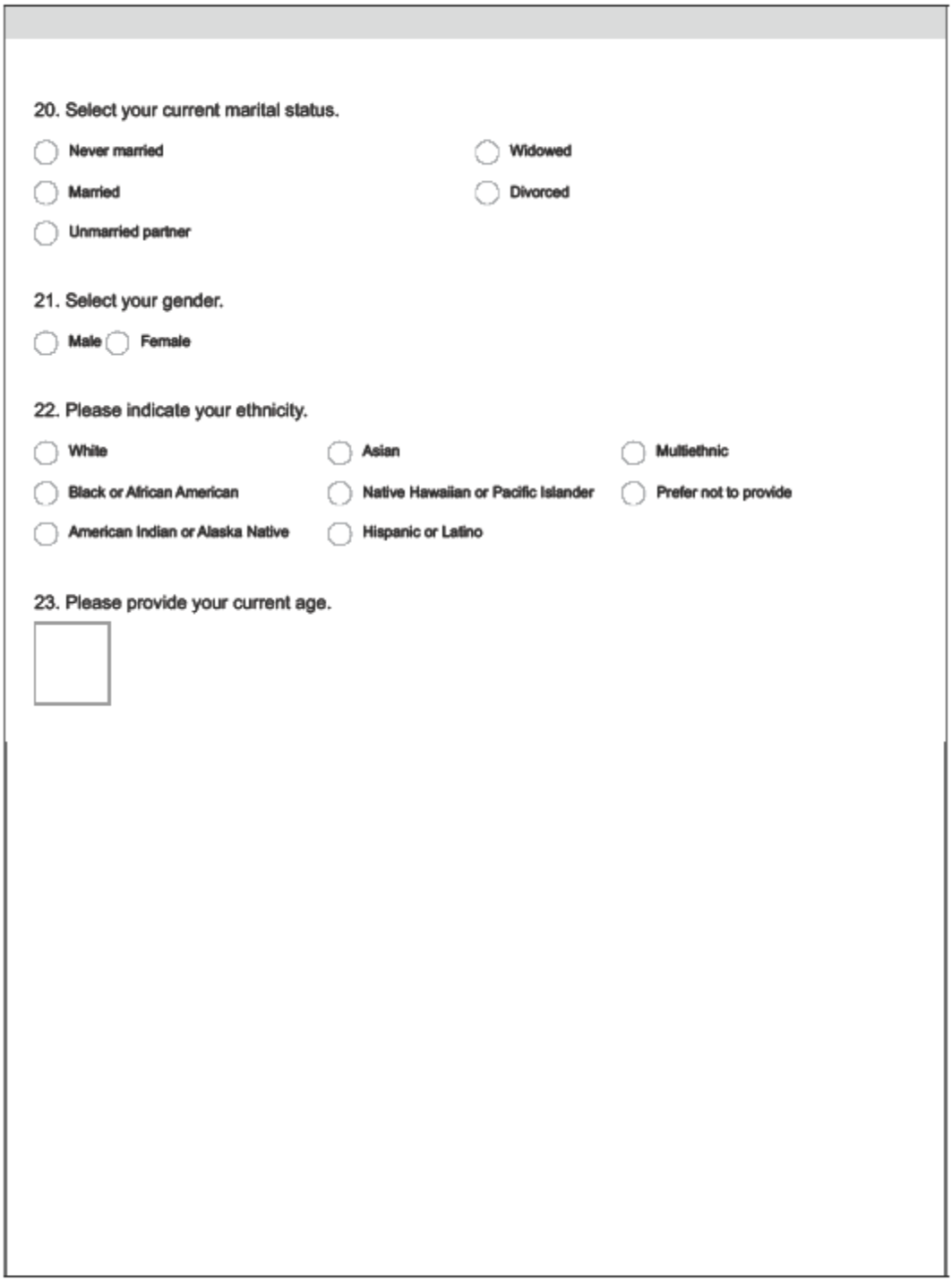
- ◯ Yes
- ◯ No

19a. Please indicate how long you have held the state issued license.

	Less than 1 year	1 - 2 years	3 - 5 years	6 - 8 years	9 - 11 years	More than 11 years
Number of years	☐	☐	☐	☐	☐	☐


19b. Do you currently work in the licensed field?
Yes
No


19c. During a disaster, will your employer expect you to report to work?
Yes
No



20. Select your current marital status.

- ◯ Never married
- ◯ Married
- ◯ Unmarried partner
- ◯ Widowed
- ◯ Divorced

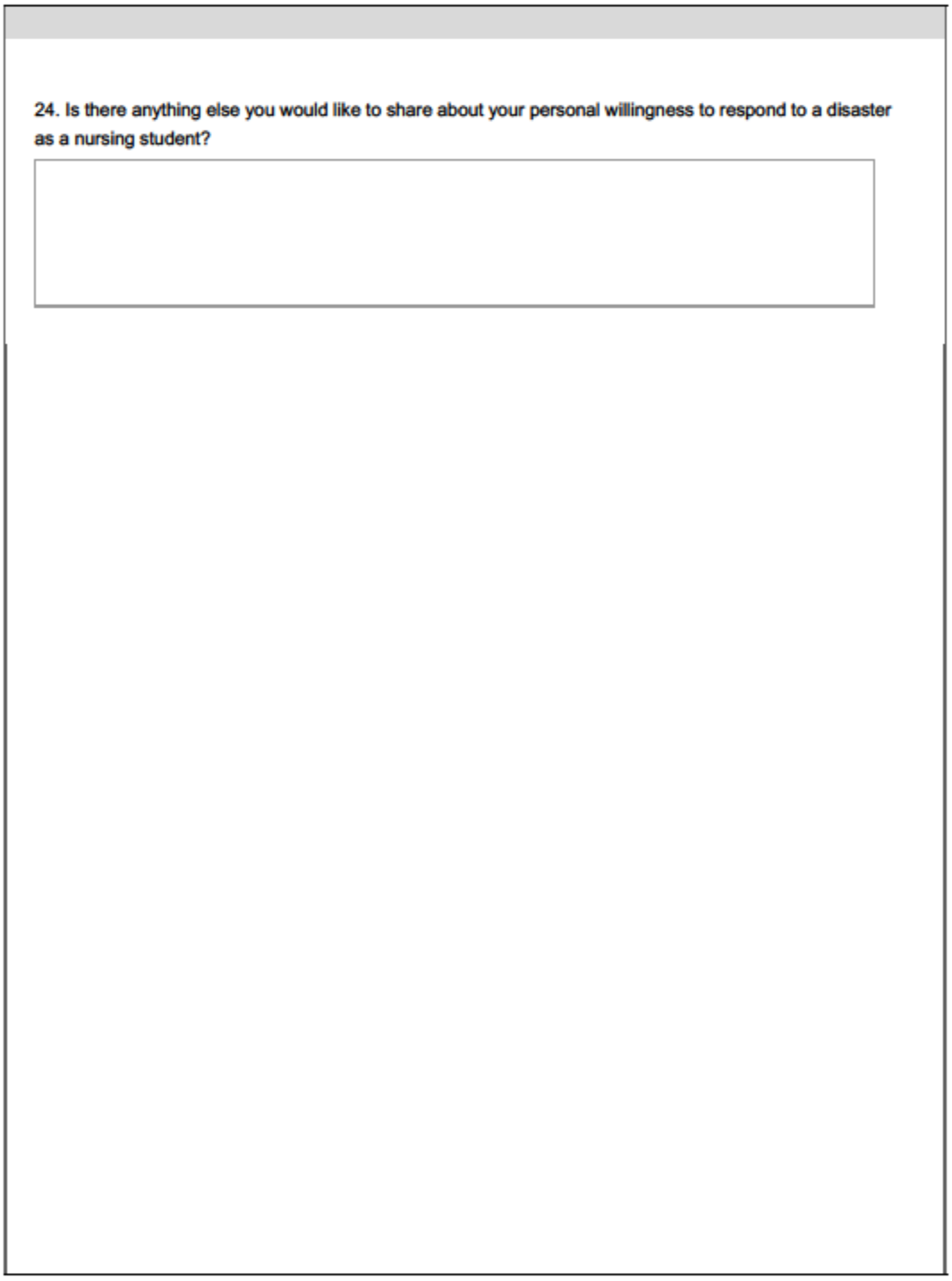
21. Select your gender.

- ◯ Male
- ◯ Female

22. Please indicate your ethnicity.

- ◯ White
- ◯ Black or African American
- ◯ American Indian or Alaska Native
- ◯ Asian
- ◯ Native Hawaiian or Pacific Islander
- ◯ Hispanic or Latino
- ◯ Multiethnic
- ◯ Prefer not to provide

23. Please provide your current age.


24. Is there anything else you would like to share about your personal willingness to respond to a disaster as a nursing student?

Appendix 7 – SurveyMonkey Informed Consent and Survey

Appendix 8 – IRB Approval with Informed Consent and Participant Email Letters

Oklahoma State University Institutional Review Board

Date:	Monday, March 21, 2016
IRB Application No	AS1632
Proposal Title:	Factors that affect nursing students' willingness to respond to disasters
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 3/20/2019

Principal Investigator(s):

Karen Blackwood
Stillwater, OK 74078

David M. Neal
210 Murray
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,

Hugh Crethar, Chair
Institutional Review Board

IRB Application Appendix C- Adult Consent Form

ADULT CONSENT FORM
OKLAHOMA STATE UNIVERSITY

PROJECT TITLE: Factors that Affect Nursing Students' Willingness to Respond to Disasters

INVESTIGATORS:
Karen Blackwood,
Masters of Science, Jacksonville State University
Masters of Public Administration, Troy State University
Bachelors of Art, University of West Florida

PURPOSE:
This research study will examine the willingness of undergraduate nursing students to help during disasters. This study also examines factors that may affect student nurses' willingness to respond.

PROCEDURES
You will be asked to complete a survey consisting of thirteen questions. The survey is designed to take approximately 20 minutes to complete.

RISKS OF PARTICIPATION:
There are no known risks associated with this project, which are greater than those ordinarily encountered in daily life.

BENEFITS OF PARTICIPATION:
There are no expected personal benefits to individuals participating in this study. Your participation will contribute will contribute to the expansion of knowledge about the participation of student nurses in future disasters. If you are interested, we will send you a copy of the results of the study when it is finished.

CONFIDENTIALITY:
To ensure confidentiality, the survey used in this research study will not collect any personally identifiable information. This ensures the anonymity of respondents. The data collected in this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research data will be stored on a password protected computer and only researchers and individuals responsible for research oversight will have access to the records.

COMPENSATION:
No compensation is offered for your participation in this research study.

CONTACTS:
You may contact me at the following address and phone number, should you desire to discuss your participation in the study and/or request information about the results of the study: Karen Blackwood, Karen.blackwood@okstate.edu, 901-451-4148. You may also contact my dissertation committee chair, Professor Dave Neal at dave.neal@okstate.edu. If you have

IRB Application Appendix C- Adult Consent Form

questions about your rights as a research volunteer, you may contact the IRB Office at 223 Scott Hall, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

PARTICIPANT RIGHTS:
I understand that my participation is voluntary; that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time, without penalty.

CONSENT DOCUMENTATION:
I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the benefits of my participation. I also understand the following statements:
I affirm that I am 18 years of age or older.

I understand the information presented in the research invitation letter and that my participation is voluntary. I may decline to participate or discontinue participation at any time prior to submitting my survey responses. Once I begin the survey, I can discontinue my participation by clicking the 'Exit this survey' button in the top right corner of the survey. My refusal to participate or discontinuation will not result in any penalty.

□ Yes, I give my consent to be a subject of your research and agree to participate in this study.

□ No, I do not give my consent to participate in your research nor do I agree to participate in this study.

IRB Application Appendix F - Initial Participant Email Letter

Dear Nursing Student,

My name is Karen Blackwood and I am a doctoral student at Oklahoma State University. I am conducting my dissertation research project to complete the Fire and Emergency Management Administration PhD Program. This study examines the willingness of undergraduate nursing students to help during disasters. In addition, the study examines factors that may affect student nurses' willingness to respond. To date, very little research has been done in this area.

As a student currently enrolled in an undergraduate nursing degree program, I invite you to participate in this research study by completing the following online survey. Nursing students from two universities, Arkansas State University and University of Utah, are participating in this study. Your participation is critical to the success of this research and will contribute to the greater body of knowledge about the participation of student nurses in future disasters.

By agreeing to participate in the study, you are giving your consent for the researcher to include your responses in her data analysis. Your participation in this research study is strictly voluntary and you may choose not to participate without fear of penalty or any negative consequences. You will be able to withdraw from the online survey at any time prior to submitting your responses. If you decide to withdraw prior to submitting your response, any responses you completed will be deleted, including the informed consent agreement.

An informed consent agreement will appear on the first screen page of the survey. Please review that information. You must acknowledge consent prior to beginning the survey. This survey will not collect any individually identifiable information. In addition, when completed, this dissertation will not include any remarks or comments that could identify you as an individual participant. All results will be presented as aggregate, summary data.

Your participation in this research project is completely voluntary. You may decline altogether or leave blank any questions you don't wish to answer. There are no known risks to participation beyond those encountered in everyday life. Your responses will remain confidential and anonymous. Data from this research will be kept under lock and key and reported only as a collective combined total. No one other than the researcher will know your individual answers to this questionnaire.

Your participation will contribute to establishing a body of knowledge on willingness of nursing students to respond to disaster. No compensation will be offered for your participation. If you decide to participate after reading this letter, you can access the survey from the following link https://www.surveymonkey.com/r/NHZHP9J. Completing this survey should take approximately 20 minutes. If you have any questions, please contact me at Karen.blackwood@okstate.edu or my dissertation committee chair, Professor Dave Neal at dave.neal@okstate.edu. Thank you for your consideration.

Respectfully,

Karen Blackwood

Okla. State Univ.
IRB
Approved 3-21-16
Expires 3-20-19
IRB # ED-16-32

IRB Application Appendix G – Two Week Participant Email Letter

Dear Nursing Student,

This letter is to follow up on a letter emailed to you approximately two weeks ago requesting your participation in my dissertation research project. If you have already completed the survey, please accept my thanks and disregard this letter. However, if you have not yet completed the survey, please consider taking a few minutes to complete it now. The survey will close on April 18, 2016.

While your participation will not have any effect on your status as a nursing student at your university and all information you provide will be confidential and individually unidentifiable, completing the survey will contribute to establishing a body of knowledge on willingness of nursing students to respond to disaster. You can access the survey from the following link https://www.surveymonkey.com/r/NHZHP9J. Completing this survey should take approximately 20 minutes. If you have any questions, please contact me at Karen.blackwood@okstate.edu or my dissertation committee chair, Professor Dave Neal at dave.neal@okstate.edu. Thank you for your consideration.

Respectfully,

Karen Blackwood

Appendix 8 – IRB Approval with Informed Consent and Participant Email Letters

IRB Application Appendix H - Four Week Participant Email Letter

Dear Nursing Student,

This letter is to follow up on a letter emailed to you approximately four weeks ago requesting your participation in my dissertation research project. If you have already completed the survey, please accept my thanks and disregard this letter. However, if you have not yet completed the survey, please consider taking a few minutes to complete it now. The survey will close on April 18, 2016.

While your participation will not have any effect on your status as a nursing student at your university and all information you provide will be confidential and individually unidentifiable, completing the survey will contribute to establishing a body of knowledge on willingness of nursing students to respond to disaster. You can access the survey from the following link https://www.surveymonkey.com/r/NHZHP9J. Completing this survey should take approximately 20 minutes. If you have any questions, please contact me at Karen.blackwood@okstate.edu or my dissertation committee chair, Professor Dave Neal at dave.neal@okstate.edu. Thank you for your consideration.

Respectfully,

Karen Blackwood

Appendix 8 – IRB Approval with Informed Consent and Participant Email Letters

IRB Application Appendix I - Final Participant Email Letter

Dear Nursing Student,

I am following up on a request emailed to you approximately five weeks ago asking for your participation in my dissertation research project. If you have already completed the survey, please accept my thanks and disregard this letter. However, if you have not yet completed the survey, please consider taking a few minutes and complete it now. The survey will close on April 18, 2016.

While your participation will not have any effect on your status as a nursing student at your university and all information you provide will be confidential and individually unidentifiable, completing the survey will contribute to establishing a body of knowledge on willingness of nursing students to respond to disaster. You can access the survey from the following link https://www.surveymonkey.com/r/NHZHP9J. Completing this survey should take approximately 20 minutes. If you have any questions, please contact me at Karen.blackwood@okstate.edu or my dissertation committee chair, Professor Dave Neal at dave.neal@okstate.edu. Thank you for your

Respectfully,

Karen Blackwood

Okla. State Univ.
IRB
Approved 3-21-16
Expires 3-20-17
IRB # ED-16-32

Appendix 8 – IRB Approval with Informed Consent and Participant Email Letters

Codebook

willingnat

		Value	Count	Percent
Standard Attributes	Position	4		
	Label	Natural disaster willingness		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Not at all willing to respond	0	0.0%
	2.00	2-Somewhat unwilling to respond	2	1.8%
	3.00	3-Uncertain	6	5.5%
	4.00	4-Somewhat willing to respond	31	28.2%
	5.00	5-Completely willing to respond	71	64.5%

willinghc

		Value	Count	Percent
Standard Attributes	Position	5		
	Label	Human caused willingness		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Not at all willing to respond	1	0.9%
	2.00	2-Somewhat unwilling to respond	6	5.5%
	3.00	3-Uncertain	15	13.6%
	4.00	4-Somewhat willing to respond	38	34.5%
	5.00	5-Completely willing to respond	50	45.5%

willnatagree

		Value	Count	Percent
Standard Attributes	Position	6		
	Label	Natural disaster willing		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Strongly disagree	0	0.0%
	2.00	2-Somewhat disagree	2	1.8%
	3.00	3-Neither agree nor disagree	4	3.6%
	4.00	4-Somewhat agree	25	22.7%
	5.00	5-Strongly agree	79	71.8%

willhcagree

		Value	Count	Percent
Standard Attributes	Position	7		
	Label	Human caused willing		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Strongly disagree	0	0.0%
	2.00	2-Somewhat disagree	6	5.5%
	3.00	3-Neither agree nor disagree	12	10.9%
	4.00	4-Somewhat agree	29	26.4%
	5.00	5-Strongly agree	63	57.3%

OW_score_total

		Value
Standard Attributes	Position	12
	Label	OW score total (four subscales)
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	110
	Missing	0
Central Tendency and Dispersion	Mean	17.7364
	Standard Deviation	2.71819
	Percentile 25	16.0000
	Percentile 50	18.0000
	Percentile 75	20.0000

taskfeedpat

		Value	Count	Percent
Standard Attributes	Position	13		
	Label	Feed patients		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	0	0.0%
	2.00	Not Sure	6	5.5%

3.00	Yes	104	94.5%

taskrefresh

		Value	Count	Percent
Standard Attributes	Position	14		
	Label	Serve refreshments to staff		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	4	3.6%
	2.00	Not Sure	8	7.3%
	3.00	Yes	98	89.1%

taskchildcare

		Value	Count	Percent
Standard Attributes	Position	15		
	Label	Provide childcare for hospital workers		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	7	6.4%
	2.00	Not Sure	9	8.2%
	3.00	Yes	94	85.5%

taskclinicalsupport

		Value	Count	Percent
Standard Attributes	Position	16		
	Label	Basic clinical support (e.g., taking vital signs)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	0	0.0%
	2.00	Not Sure	2	1.8%
	3.00	Yes	108	98.2%

taskclinicalcare

		Value	Count	Percent
Standard Attributes	Position	17		
	Label	Clinical care (e.g., triage and treatment)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	3	2.7%
	2.00	Not Sure	6	5.5%
	3.00	Yes	101	91.8%

taskemotional

		Value	Count	Percent
Standard Attributes	Position	18		
	Label	Provide emotional comfort or support		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	3	2.7%
	2.00	Not Sure	7	6.4%
	3.00	Yes	100	90.9%

taskadmin

		Value	Count	Percent
Standard Attributes	Position	19		
	Label	Answer telephones or other administrative support		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	11	10.0%
	2.00	Not Sure	11	10.0%

	3.00	Yes	88	80.0%

taskwhatever

		Value	Count	Percent
Standard Attributes	Position	20		
	Label	Whatever tasks need to be done		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	3	2.7%
	2.00	Not Sure	13	11.8%
	3.00	Yes	94	85.5%

taskother

		Value
Standard Attributes	Label	Other (Identify any other activities you would be willing to perform)
	Type	String
	Format	A32767
	Measurement	Nominal
	Role	Input
Valid Values		Any task that need to be done.
		anything i can
		Anything that is helpful.
		Assisting in anything that needs to be done to take care of the situation at hand.
		Help transport pts around hospital/care site.
		I feel like the non-nursing skills would best be left to lay volunteers. If there were a desperate need for them, I would do them. But I would prefer to make more effective use of my nursing training.
		I would personally be willing to assist with whatever needed to be done.
		I'd be willing to decontaminate patients in a hazmat disaster
		Nothing is too low when we are trying to work as a team. As long as it needs to be done and is the best use of my time and talents, I am willing.
		resources to help provide post medicinal attention

Taskcount

		Value
Standard Attributes	Position	22
	Label	Task count yes
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	110
	Missing	0
Central Tendency and Dispersion	Mean	7.1545
	Standard Deviation	1.56912
	Percentile 25	7.0000
	Percentile 50	8.0000
	Percentile 75	8.0000

moralobligation

		Value	Count	Percent
Standard Attributes	Position	23		
	Label	Moral obligation		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Strongly disagree	2	1.8%
	2.00	2-Somewhat disagree	7	6.4%
	3.00	3-Neither agree nor disagree	19	17.3%
	4.00	4-Somewhat agree	47	42.7%
	5.00	5-Strongly agree	35	31.8%

altruismtotal

		Value
Standard Attributes	Position	24
	Label	<none>
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	110
	Missing	0
Central Tendency and Dispersion	Mean	8.2636
	Standard Deviation	1.49419
	Percentile 25	7.0000
	Percentile 50	8.0000
	Percentile 75	10.0000

motivationcalling

		Value	Count	Percent
Standard Attributes	Position	25		
	Label	I want to be a nurse because I have a calling.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	23	20.9%
	2.00	Not Sure	19	17.3%
	3.00	Yes	68	61.8%

motivationcope

		Value	Count	Percent
Standard Attributes	Position	26		
	Label	I want to be a nurse because I want to help others cope with illness.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	3	2.7%
	2.00	Not Sure	1	0.9%

	3.00	Yes	106	96.4%

motivationhelp

		Value	Count	Percent
Standard Attributes	Position	27		
	Label	I want to be a nurse because I want to help people.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	2	1.8%
	2.00	Not Sure	0	0.0%
	3.00	Yes	108	98.2%

motivationmeaning

		Value	Count	Percent
Standard Attributes	Position	28		
	Label	I want to be a nurse because nursing gives my life a sense of meaning.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	13	11.8%
	2.00	Not Sure	10	9.1%
	3.00	Yes	87	79.1%

motivationcaring

		Value	Count	Percent
Standard Attributes	Position	29		
	Label	I want to be a nurse because I want to work in a caring occupation.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	7	6.4%
	2.00	Not Sure	4	3.6%

	3.00	Yes	99	90.0%

motivationadvance

		Value	Count	Percent
Standard Attributes	Position	30		
	Label	I want to be a nurse because I feel that I can advance in the field of healthcare.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	8	7.3%
	2.00	Not Sure	16	14.5%
	3.00	Yes	86	78.2%

motivationsecurity

		Value	Count	Percent
Standard Attributes	Position	31		
	Label	I want to be a nurse because the occupation offers job security.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	9	8.2%
	2.00	Not Sure	2	1.8%
	3.00	Yes	99	90.0%

motivationscience

		Value	Count	Percent
Standard Attributes	Position	32		
	Label	I want to be a nurse because I am interested in science.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	11	10.0%
	2.00	Not Sure	5	4.5%

	3.00	Yes	94	85.5%

motivationflexibility

		Value	Count	Percent
Standard Attributes	Position	33		
	Label	I want to be a nurse because the occupation offers job flexibility.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	11	10.0%
	2.00	Not Sure	9	8.2%
	3.00	Yes	90	81.8%

motivationschooling

		Value	Count	Percent
Standard Attributes	Position	34		
	Label	I want to be a nurse because the flexible educational requirements permit me to finish my schooling quickly.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	68	61.8%
	2.00	Not Sure	10	9.1%
	3.00	Yes	32	29.1%

motivationsalary

		Value	Count	Percent
Standard Attributes	Position	35		
	Label	I want to be a nurse because I can earn a good salary.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	23	20.9%
	2.00	Not Sure	13	11.8%
	3.00	Yes	74	67.3%

motivationother

		Value
Standard Attributes	Label	Other
	Type	String
	Format	A32767
	Measurement	Nominal
	Role	Input
Valid Values		Being able to move up, getting advanced degrees if desired
		Blood doesn't bother me 3
		Family members
		Health is the first way people will accept help. It's a doorway to being able to help them in multiple ways: mental, emotional, aka more than the physical.
		I want to be a beacon of hope to the hopeless, as Jesus is.
		It fits with my worldview. I like being around people and talking to people and listening to their stories.
		To provide for my daughter

motivationcount

		Value
Standard Attributes	Position	37
	Label	Motivation count yes
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	110
	Missing	0
Central Tendency and Dispersion	Mean	8.5727
	Standard Deviation	1.73712
	Percentile 25	7.0000
	Percentile 50	9.0000
	Percentile 75	10.0000

encouraged

		Value	Count	Percent
Standard Attributes	Position	38		
	Label	Students encouraged to volunteer		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Strongly disagree	0	0.0%
	2.00	2-Somewhat disagree	3	2.7%
	3.00	3-Neither agree nor disagree	14	12.7%
	4.00	4-Somewhat agree	40	36.4%
	5.00	5-Strongly agree	53	48.2%

currentvolunteer

		Value	Count	Percent
Standard Attributes	Position	39		
	Label	Presently pre-registered with a volunteer disaster response organization		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	94	85.5%
	1.00	Yes	16	14.5%

barrierpersonalsafety

		Value	Count	Percent
Standard Attributes	Position	40		
	Label	Barrier fear for my personal safety and well-being		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	40	36.4%
	2.00	Not Sure	14	12.7%

3.00	Yes	56	50.9%

barrierfamilysafety

		Value	Count	Percent
Standard Attributes	Position	41		
	Label	Barrier fear for the safety and well-being of my family members		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	15	13.6%
	2.00	Not Sure	14	12.7%
	3.00	Yes	81	73.6%

barrierchildren

		Value	Count	Percent
Standard Attributes	Position	42		
	Label	Barrier responsibility for dependent children		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	60	54.5%
	2.00	Not Sure	9	8.2%
	3.00	Yes	41	37.3%

barriertypedisaster

		Value	Count	Percent
Standard Attributes	Position	43		
	Label	Barrier type of disaster		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	52	47.3%
	2.00	Not Sure	9	8.2%
	3.00	Yes	49	44.5%

barriertraining

		Value	Count	Percent
Standard Attributes	Position	44		
	Label	Barrier lack of disaster training and education		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	33	30.0%
	2.00	Not Sure	15	13.6%
	3.00	Yes	62	56.4%

barrierstudent

		Value	Count	Percent
Standard Attributes	Position	45		
	Label	Barrier being a nursing student		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	79	71.8%
	2.00	Not Sure	6	5.5%
	3.00	Yes	25	22.7%

barrierother

		Value
Standard Attributes	Label	Barrier other
	Type	String
	Format	A32767
	Measurement	Nominal
	Role	Input
Valid Values		I'm not sure if the communication needed would be adequate to help me know where to go or what to do.
		Legal problems, if I'm not covered by good Samaritan laws
		Not being registered to help/knowing how to get involved.
		Transportation/accessibility. Lack of good management at disaster site.

barriercount

		Value
Standard Attributes	Position	46
	Label	barrier count
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	110
	Missing	0
Central Tendency and Dispersion	Mean	2.8545
	Standard Deviation	1.58454
	Percentile 25	2.0000
	Percentile 50	3.0000
	Percentile 75	4.0000

concerself

		Value	Count	Percent
Standard Attributes	Position	48		
	Label	Concern for personal safety Likert item		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Strongly disagree	6	5.5%
	2.00	2-Somewhat disagree	8	7.3%
	3.00	3-Neither agree nor disagree	15	13.6%
	4.00	4-Somewhat agree	54	49.1%
	5.00	5-Strongly agree	27	24.5%

concernfamily

		Value	Count	Percent
Standard Attributes	Position	49		
	Label	Concern for safety of family Likert item		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Strongly disagree	2	1.8%
	2.00	2-Somewhat disagree	6	5.5%
	3.00	3-Neither agree nor disagree	14	12.7%
	4.00	4-Somewhat agree	33	30.0%
	5.00	5-Strongly agree	55	50.0%

depchildren

		Value	Count	Percent
Standard Attributes	Position	50		
	Label	Dependent children in household		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	93	84.5%
	1.00	Yes	17	15.5%

numberchildren

		Value	Count	Percent
Standard Attributes	Position	51		
	Label	Number of children		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	1	5	4.5%
	2.00	2	5	4.5%
	3.00	3	3	2.7%
	4.00	4	2	1.8%
	5.00	5	2	1.8%
	6.00	6 or more	0	0.0%
Missing Values	System		93	84.5%

dependentage1

		Value	Count	Percent
Standard Attributes	Position	52		
	Label	Children age under 1 year		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		106	96.4%
	1.00	Under 1 year	4	3.6%

dependentage2

		Value	Count	Percent
Standard Attributes	Position	53		
	Label	Children age 1-2 years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		107	97.3%
	1.00	1 - 2 years	3	2.7%

dependentage3

		Value	Count	Percent
Standard Attributes	Position	54		
	Label	Children age 3-5 years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		105	95.5%
	1.00	3 - 5 years	5	4.5%

dependentage4

		Value	Count	Percent
Standard Attributes	Position	55		
	Label	Children age 6-8 years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		103	93.6%
	1.00	6 - 8 years	7	6.4%

dependentage5

		Value	Count	Percent
Standard Attributes	Position	56		
	Label	Children age 9-11 years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		102	92.7%
	1.00	9 - 11 years	8	7.3%

dependentage6

		Value	Count	Percent
Standard Attributes	Position	57		
	Label	Children age 12-14 years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		104	94.5%
	1.00	12 - 14 years	6	5.5%

dependentage7

		Value	Count	Percent
Standard Attributes	Position	58		
	Label	Children age 15-17 years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		107	97.3%
	1.00	15 - 17 years	3	2.7%

dependentage8

		Value	Count	Percent
Standard Attributes	Position	59		
	Label	Children age 18 years or older		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		108	98.2%
	1.00	18 years or over	2	1.8%

soleguard

		Value	Count	Percent
Standard Attributes	Position	60		
	Label	Sole guardian of the dependent children		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	10	9.1%
	1.00	Yes	7	6.4%
Missing Values	System		93	84.5%

depcare

		Value	Count	Percent
Standard Attributes	Position	61		
	Label	Other people care for the dependent children while you are at school or work		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	2	1.8%
	1.00	Yes	15	13.6%
Missing Values	System		93	84.5%

childcaredifficult

		Value	Count	Percent
Standard Attributes	Position	62		
	Label	Level of difficult childcare during a disaster		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	1-Strongly disagree	3	2.7%
	2.00	2-Somewhat disagree	3	2.7%
	3.00	3-Neither agree nor disagree	1	0.9%
	4.00	4-Somewhat agree	3	2.7%
	5.00	5-Strongly agree	7	6.4%
Missing Values	System		93	84.5%

disastertraining

		Value	Count	Percent
Standard Attributes	Position	63		
	Label	Attended formal disaster training course(s) from the university as part of your degree program		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	55	50.0%
	1.00	Yes	55	50.0%

trainingcourses1

		Value	Count	Percent
Standard Attributes	Position	64		
	Label	Number of formal disaster courses completed		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		71	64.5%
	1.00	1 Course	39	35.5%

trainingcourses2

		Value	Count	Percent
Standard Attributes	Position	65		
	Label	Number of formal disaster courses completed		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		104	94.5%
	1.00	2 Courses	6	5.5%

trainingcourses3

		Value	Count	Percent
Standard Attributes	Position	66		
	Label	Number of formal disaster courses completed		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		103	93.6%
	1.00	3 Courses	7	6.4%

trainingcourses4

		Value	Count	Percent
Standard Attributes	Position	67		
	Label	Number of formal disaster courses completed		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		107	97.3%
	1.00	4 Courses	3	2.7%

trainingcourses5

		Value	Count	Percent
Standard Attributes	Position	68		
	Label	Number of formal disaster courses completed		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		110	100.0%
	1.00	5 or More Courses	0	0.0%

coursetitle

		Value
Standard Attributes	Label	Title or topic of the formal disaster training course(s) you have completed.
	Type	String
	Format	A32767
	Measurement	Nominal
	Role	Input
Valid Values		Basic disaster life support
		Basic Disaster Life support
		Basic Disaster Life Support
		Basic Disaster Life Support, Advanced Disaster Life Support, FARMMEDIC, and IS-100
		basic disaster preparedness
		Basic Disatster Life Support
		BDLS
		BDLS & DPEM
		BDLS training
		BDLS, Simulation
		BLDS
		Diaster and Preparedness
		disaster
		Disaster Prepardness and Emergency Management
		Disaster preparedness
		Disaster Preparedness
		Disaster preparedness (earthquake and epidemic triaging and cares)
		Disaster Preparedness and Emergency Management Disaster Minor
		Disaster Preparedness,
		Disaster response preparedness, inter professional education
		General disaster preparedness training session
		Helped triage in a simulation
		Hospital board
		Inter Professional Training Experience
		IPE Emergency Preparedness
		National incident management
		Principles of disaster management, BDLS, intro to CBRNE
		Principles of disaster preparedness and emergency management, BDLS, and Forensic Nursing
		Sociology of disaster, disaster preparedness,
		UUHSC 6800 Preparedness & Response

disastercurriculareq

		Value	Count	Percent
Standard Attributes	Position	70		
	Label	Disaster training curricula should be required in nursing degree programs		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	7	6.4%
	1.00	Yes	103	93.6%

disasterearthquake

		Value	Count	Percent
Standard Attributes	Position	71		
	Label	Earthquake		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	4	3.6%
	2.00	Not Sure	10	9.1%
	3.00	Yes	96	87.3%

disasterwinter

		Value	Count	Percent
Standard Attributes	Position	72		
	Label	Winter Storm		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	10	9.1%
	2.00	Not Sure	15	13.6%
	3.00	Yes	85	77.3%

disastertornado

		Value	Count	Percent
Standard Attributes	Position	73		
	Label	Tornado		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	2	1.8%
	2.00	Not Sure	9	8.2%
	3.00	Yes	99	90.0%

disasterflood

		Value	Count	Percent
Standard Attributes	Position	74		
	Label	Flood		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	6	5.5%
	2.00	Not Sure	10	9.1%
	3.00	Yes	94	85.5%

disastermci

		Value	Count	Percent
Standard Attributes	Position	75		
	Label	Mass Casualty Incident		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	4	3.6%
	2.00	Not Sure	8	7.3%
	3.00	Yes	98	89.1%

disasterinfluenza

		Value	Count	Percent
Standard Attributes	Position	76		
	Label	Influenza Pandemic		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	12	10.9%
	2.00	Not Sure	23	20.9%
	3.00	Yes	75	68.2%

disasterinfectious

		Value	Count	Percent
Standard Attributes	Position	77		
	Label	Infectious Disease Outbreak		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	20	18.2%
	2.00	Not Sure	31	28.2%
	3.00	Yes	59	53.6%

disasterbiological

		Value	Count	Percent
Standard Attributes	Position	78		
	Label	Biological Terrorist Event		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	20	18.2%
	2.00	Not Sure	34	30.9%
	3.00	Yes	56	50.9%

disasterchemical

		Value	Count	Percent
Standard Attributes	Position	79		
	Label	Chemical Terrorist Event		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	11	10.0%
	2.00	Not Sure	28	25.5%
	3.00	Yes	71	64.5%

disasterradiological

		Value	Count	Percent
Standard Attributes	Position	80		
	Label	Radiological Terrorist Event		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	13	11.8%
	2.00	Not Sure	31	28.2%
	3.00	Yes	66	60.0%

disastercountwilling

		Value
Standard Attributes	Position	81
	Label	Disaster count willing
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	110
	Missing	0
Central Tendency and Dispersion	Mean	7.2636
	Standard Deviation	2.77167
	Percentile 25	5.0000
	Percentile 50	7.5000

Percentile 75	10.0000

studentcourseload

		Value	Count	Percent
Standard Attributes	Position	82		
	Label	Heavy course load		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	47	42.7%
	2.00	Not Sure	7	6.4%
	3.00	Yes	56	50.9%

studentdontknowhowtohelp

		Value	Count	Percent
Standard Attributes	Position	83		
	Label	Don't know enough to help		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	36	32.7%
	2.00	Not Sure	6	5.5%
	3.00	Yes	68	61.8%

studentnotlicensed

		Value	Count	Percent
Standard Attributes	Position	84		
	Label	Not licensed yet		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	45	40.9%
	2.00	Not Sure	6	5.5%
	3.00	Yes	59	53.6%

studentnotinsured

		Value	Count	Percent
Standard Attributes	Position	85		
	Label	Not insured for liability		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	49	44.5%
	2.00	Not Sure	12	10.9%
	3.00	Yes	49	44.5%

studentjob

		Value	Count	Percent
Standard Attributes	Position	86		
	Label	Have a part-time or full-time job		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	65	59.1%
	2.00	Not Sure	2	1.8%
	3.00	Yes	43	39.1%

studentother

		Value
Standard Attributes	Label	Other: (Identify any other factors related to being a nursing student that might affect your willingness to respond)
	Type	String
	Format	A32767
	Measurement	Nominal
	Role	Input
Valid Values		Area of disaster
		Children
		Children at home
		Having family members/dependents I need to ensure are safe and properly cared for. Other than that, I would be there. (if needed? Some things on the last page I would respond if issued a call, but am not sure if I'd be needed?)
		I have a newborn and 2 other children to care for
		I think that in a serious disaster, work load just won't matter for a little while and a student nurse could be helpful regardless of licensing.
		If it wasn't for the liability I would absolutely respond to a disaster but I'm not licensed and don't know how the laws work. Will someone be available to tell me what to do and help me if I have questions?

studentcount

		Value
Standard Attributes	Position	88
	Label	Student count yes
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	110
	Missing	0
Central Tendency and Dispersion	Mean	2.5000
	Standard Deviation	1.54890
	Percentile 25	1.0000
	Percentile 50	3.0000
	Percentile 75	4.0000

enablervaccinesself

		Value	Count	Percent
Standard Attributes	Position	89		
	Label	If vaccines and prophylaxis were available to me		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	2	1.8%
	2.00	Not Sure	2	1.8%
	3.00	Yes	106	96.4%

enablerselfppe

		Value	Count	Percent
Standard Attributes	Position	90		
	Label	If I were provided with appropriate personal protective equipment (PPE)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	2	1.8%
	2.00	Not Sure	0	0.0%
	3.00	Yes	108	98.2%

enablevaccinesfamily

		Value	Count	Percent
Standard Attributes	Position	91		
	Label	If vaccines and prophylaxis were provided to my family members		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	5	4.5%
	2.00	Not Sure	5	4.5%
	3.00	Yes	100	90.9%

enablerpersonalsafe

		Value	Count	Percent
Standard Attributes	Position	92		
	Label	If I knew I would be safe from illness or harm		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	6	5.5%
	2.00	Not Sure	0	0.0%
	3.00	Yes	104	94.5%

enablerfamilysafety

		Value	Count	Percent
Standard Attributes	Position	93		
	Label	If I knew my family would be safe		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	3	2.7%
	2.00	Not Sure	1	0.9%
	3.00	Yes	106	96.4%

enablerknowledge

		Value	Count	Percent
Standard Attributes	Position	94		
	Label	If I had more knowledge about disaster response		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	4	3.6%
	2.00	Not Sure	0	0.0%
	3.00	Yes	106	96.4%

enablerchildcare

		Value	Count	Percent
Standard Attributes	Position	95		
	Label	If I had access to safe reliable childcare		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	37	33.6%
	2.00	Not Sure	10	9.1%
	3.00	Yes	63	57.3%

enablerpetcare

		Value	Count	Percent
Standard Attributes	Position	96		
	Label	If I had access to safe reliable pet care		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	No	42	38.2%
	2.00	Not Sure	5	4.5%
	3.00	Yes	63	57.3%

enablerother

		Value
Standard Attributes	Label	Other: (Identify any other items that might increase your willingness to respond)
	Type	String
	Format	A32767
	Measurement	Nominal
	Role	Input
Valid Values		Ability to get to and from disaster site
		If I had access to safe transportation (i.e. Winter storm).

		The no's are currently not applicable to me

enablercount

		Value
Standard Attributes	Position	98
	Label	Enabler count yes
	Type	Numeric
	Format	F8.2
	Measurement	Scale
	Role	Input
N	Valid	110
	Missing	0
Central Tendency and Dispersion	Mean	6.8727
	Standard Deviation	1.18947
	Percentile 25	6.0000
	Percentile 50	7.0000
	Percentile 75	8.0000

university

		Value	Count	Percent
Standard Attributes	Position	99		
	Label	University you current attend		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	Arkansas State University	69	62.7%
	2.00	University of Utah	41	37.3%

currentlicense

		Value	Count	Percent
Standard Attributes	Position	101		
	Label	currently hold a state issued license in an emergency or healthcare field (i.e., RN, LPN, CNA, Paramedic, EMT)		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	72	65.5%
	1.00	Yes	38	34.5%

licensure1

		Value	Count	Percent
Standard Attributes	Position	102		
	Label	Number of years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00		8	7.3%
	1.00	Less than 1 year	3	2.7%
Missing Values	System		99	90.0%

licensure2

		Value	Count	Percent
Standard Attributes	Position	103		
	Label	Number of years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	1 - 2 years	17	15.5%
Missing Values	System		93	84.5%

licensure3

		Value	Count	Percent
Standard Attributes	Position	104		
	Label	Number of years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	3 - 5 years	12	10.9%
Missing Values	System		98	89.1%

licensure4

		Value	Count	Percent
Standard Attributes	Position	105		
	Label	Number of years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	6 - 8 years	3	2.7%
Missing Values	System		107	97.3%

licensure5

		Value	Count	Percent
Standard Attributes	Position	106		
	Label	Number of years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	9 - 11 years	1	0.9%
Missing Values	System		109	99.1%

licensure6

		Value	Count	Percent
Standard Attributes	Position	107		
	Label	Number of years		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	More than 11 years	2	1.8%
Missing Values	System		108	98.2%

currentemployed

		Value	Count	Percent
Standard Attributes	Position	108		
	Label	Currently work in the licensed field?		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	80	72.7%
	1.00	Yes	30	27.3%

employerexpectation

		Value	Count	Percent
Standard Attributes	Position	109		
	Label	Your employer expect you to report to work?		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	5	4.5%
	1.00	Yes	25	22.7%
Missing Values	System		80	72.7%

maritalstatus

		Value	Count	Percent
Standard Attributes	Position	110		
	Label	Current marital status.		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	Never married	70	63.6%
	2.00	Married	29	26.4%
	3.00	Unmarried partner	7	6.4%
	4.00	Widowed	1	0.9%
	5.00	Divorced	3	2.7%

gender

		Value	Count	Percent
Standard Attributes	Position	111		
	Label	Gender		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Male	10	9.1%
	1.00	Female	100	90.9%

ethnicity

		Value	Count	Percent
Standard Attributes	Position	112		
	Label	Ethnicity		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1.00	White	99	90.0%
	2.00	Black or African American	8	7.3%
	3.00	American Indian or Alaska Native	0	0.0%
	4.00	Asian	2	1.8%
	5.00	Native Hawaiian or Pacific Islander	0	0.0%
	6.00	Hispanic or Latino	1	0.9%
	7.00	Multiethnic	0	0.0%
	8.00	Prefer not to provide	0	0.0%

age

		Value
Standard Attributes	Position	113
	Label	Age
	Type	Numeric
	Format	F40
	Measurement	Scale
	Role	Input
N	Valid	101
	Missing	9
Central Tendency and Dispersion	Mean	25.57
	Standard Deviation	6.691
	Percentile 25	21.00
	Percentile 50	22.00
	Percentile 75	28.00

additional

		Value
Standard Attributes	Label	Anything else you would like to share about your personal willingness to respond to a disaster as a nursing student?
	Type	String
	Format	A32767
	Measurement	Nominal
	Role	Input
Valid Values		During a natural disaster I feel that a naturally feeling would kick in and promote one to help others. I am NIMS certified as being on the Arkansas Student Nurses Association board. I am unsure as to how I would know to respond or not. I believe that safety for medical personnel matters to a degree. Mostly, I am thinking of the chronic and terminal illnesses suffered by responders to 9/11. They were told it was safe to go in, but were not given the appropriate PPE, and now many of those individuals have been negatively afflicted. I would be more willing to assist in a situation where my life was in immediate danger, than to be die a slow, painful death from a preventable illness. I do not know enough to help and I am not willing to risk my health and well-being in attempt to help. I think a disaster changes the immediacy of what nurses/student nurses priorities should be. If I believed that I could provide help, I be willing to do whatever I could, including at risk to myself, though I would not be willing to put my family at risk in order to provide that help. I would be willing to help in any situation. I would be willing to respond to a disaster as long as I am protected both legally and health related and I feel that I am fully prepared to take on the task. I would definitely be willing to respond,I just don't know how the laws work for me responding I would feel more comfortable if I knew what my role would be in disaster response and wouldn't be given jobs I didn't know how to do, or would be provided with on the job training I would love to be able to help in any type of disaster. My biggest worry, however, is not knowing exactly what I need to do to be helpful. I do not know how to respond in all of these situations, and I wouldn't want to be in the way of those who do know what they are doing. I would love to know that I would be useful. I wish that was taught in schools because I believe we are, but you are always skeptical being unlicensed.

		It is everyone's duty to help each other during any kind of disaster. It would probably be a liability for the College of Nursing, and maybe the University of Utah. n/a no No No thank you Overall I'm concerned with the safety and well being of my family and myself. The ability to shadow a disaster worker, or have some hands on training in triage or other disaster skills would greatly enhance my confidence in providing assistance during a future disaster. Would like more information on how to get involved with disaster relief where to go, if travel would be compensated. Would love to help.

Dichotomous Variables

agegroup

		Value	Count	Percent
Standard Attributes	Position	115		
	Label	age group		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	age<20	1	0.9%
	2.00	age 20-29	78	70.9%
	3.00	age 30-39	18	16.4%
	4.00	age 40-49	3	2.7%
	5.00	age >=50	1	0.9%
Missing Values	System		9	8.2%

enablervaccineselfdicho

		Value	Count	Percent
Standard Attributes	Position	119		
	Label	Enabler vaccine for self dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	4	3.6%
	1.00	Yes	106	96.4%

enablerPPEdicho

		Value	Count	Percent
Standard Attributes	Position	120		
	Label	Enabler provided with PPE dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	2	1.8%
	1.00	Yes	108	98.2%

enablervaccinefamilydicho

		Value	Count	Percent
Standard Attributes	Position	121		
	Label	Enabler vaccine provided to family dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	10	9.1%
	1.00	Yes	100	90.9%

enablerselfsafedicho

		Value	Count	Percent
Standard Attributes	Position	122		
	Label	Enabler personal safety dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	6	5.5%
	1.00	Yes	104	94.5%

enablerfamilysafedicho

		Value	Count	Percent
Standard Attributes	Position	123		
	Label	Enabler family safe dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	4	3.6%
	1.00	Yes	106	96.4%

enablermoreknowledgedicho

		Value	Count	Percent
Standard Attributes	Position	124		
	Label	Enabler more knowledge dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	4	3.6%
	1.00	Yes	106	96.4%

enableraccesschildcaredicho

		Value	Count	Percent
Standard Attributes	Position	125		
	Label	Enabler access to reliable childcare dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	47	42.7%
	1.00	Yes	63	57.3%

enableraccesspetcaredicho

		Value	Count	Percent
Standard Attributes	Position	126		
	Label	Enabler access to reliable pet care dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	47	42.7%
	1.00	Yes	63	57.3%

barrierpersonalsafetydicho

		Value	Count	Percent
Standard Attributes	Position	127		
	Label	Barrier personal safety dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	54	49.1%
	1.00	Yes	56	50.9%

barrierfamilysafetydicho

		Value	Count	Percent
Standard Attributes	Position	128		
	Label	Barrier family safety dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	29	26.4%
	1.00	Yes	81	73.6%

barrierchilddicho

		Value	Count	Percent
Standard Attributes	Position	129		
	Label	Barrier responsible for children dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	69	62.7%
	1.00	Yes	41	37.3%

barriertypedisasterdicho

		Value	Count	Percent
Standard Attributes	Position	130		
	Label	Barrier type of disaster dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	61	55.5%
	1.00	Yes	49	44.5%

barriertrainingdicho

		Value	Count	Percent
Standard Attributes	Position	131		
	Label	Barrier training dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	48	43.6%
	1.00	Yes	62	56.4%

barrierstudentdicho

		Value	Count	Percent
Standard Attributes	Position	132		
	Label	Barrier being a student dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	85	77.3%
	1.00	Yes	25	22.7%

taskemotionaldicho

		Value	Count	Percent
Standard Attributes	Position	138		
	Label	task provide emotional support dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	10	9.1%
	1.00	Yes	100	90.9%

taskadmindicho

		Value	Count	Percent
Standard Attributes	Position	139		
	Label	Task admin dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	22	20.0%
	1.00	Yes	88	80.0%

taskwhateverdicho

		Value	Count	Percent
Standard Attributes	Position	140		
	Label	Task whatever was needed dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	16	14.5%
	1.00	Yes	94	85.5%

disasterearthquakedicho

		Value	Count	Percent
Standard Attributes	Position	144		
	Label	disaster earthquake dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	14	12.7%
	1.00	Willing	96	87.3%

disasterwinterdicho

		Value	Count	Percent
Standard Attributes	Position	145		
	Label	disaster winter storm dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	25	22.7%
	1.00	Willing	85	77.3%

disastertornadodicho

		Value	Count	Percent
Standard Attributes	Position	146		
	Label	disaster tornado dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	11	10.0%
	1.00	Willing	99	90.0%

disasterflooddicho

		Value	Count	Percent
Standard Attributes	Position	147		
	Label	disaster flood dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	16	14.5%
	1.00	Willing	94	85.5%

disastermcidicho

		Value	Count	Percent
Standard Attributes	Position	148		
	Label	disaster mci dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	11	10.0%
	1.00	Willing	99	90.0%

disasterinfluenzadicho

		Value	Count	Percent
Standard Attributes	Position	149		
	Label	disaster influenza dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	35	31.8%
	1.00	Willing	75	68.2%

disasterinfectiousdicho

		Value	Count	Percent
Standard Attributes	Position	150		
	Label	disaster infectious disease dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	51	46.4%
	1.00	Willing	59	53.6%

disasterbiologicaldicho

		Value	Count	Percent
Standard Attributes	Position	151		
	Label	disaster biological dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	54	49.1%
	1.00	Willing	56	50.9%

disasterchemicaldicho

		Value	Count	Percent
Standard Attributes	Position	152		
	Label	disaster chemical dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	39	35.5%
	1.00	Willing	71	64.5%

disasterradiologicaldicho

		Value	Count	Percent
Standard Attributes	Position	153		
	Label	disaster radiological dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	Not willing	44	40.0%
	1.00	Willing	66	60.0%

studentcourseloaddicho

		Value	Count	Percent
Standard Attributes	Position	156		
	Label	student heavy course load dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	54	49.1%
	1.00	Yes	56	50.9%

studentdontknowdicho

		Value	Count	Percent
Standard Attributes	Position	157		
	Label	student don't know enough dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	42	38.2%
	1.00	Yes	68	61.8%

studentnotlicenseddicho

		Value	Count	Percent
Standard Attributes	Position	158		
	Label	student not licensed dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	51	46.4%
	1.00	Yes	59	53.6%

studentnotinsureddicho

		Value	Count	Percent
Standard Attributes	Position	159		
	Label	student not insured dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	61	55.5%
	1.00	Yes	49	44.5%

studentjobdicho

		Value	Count	Percent
Standard Attributes	Position	160		
	Label	student job dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	67	60.9%
	1.00	Yes	43	39.1%

motivationcallingdicho

		Value	Count	Percent
Standard Attributes	Position	161		
	Label	motivation calling dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	42	38.2%
	1.00	Yes	68	61.8%

motivationcopedicho

		Value	Count	Percent
Standard Attributes	Position	162		
	Label	motivation help cope dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	4	3.6%
	1.00	Yes	106	96.4%

motivationhelpdicho

		Value	Count	Percent
Standard Attributes	Position	163		
	Label	motivation to help dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	2	1.8%
	1.00	Yes	108	98.2%

motivationmeaningdicho

		Value	Count	Percent
Standard Attributes	Position	164		
	Label	motivation meaning dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	23	20.9%
	1.00	Yes	87	79.1%

motivationcaringdicho

		Value	Count	Percent
Standard Attributes	Position	165		
	Label	motivation caring occupation dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	11	10.0%
	1.00	Yes	99	90.0%

motivationadvancefielddicho

		Value	Count	Percent
Standard Attributes	Position	166		
	Label	motivation advance field dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	24	21.8%
	1.00	Yes	86	78.2%

motivationjobsecuritydicho

		Value	Count	Percent
Standard Attributes	Position	167		
	Label	motivation job security dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	11	10.0%
	1.00	Yes	99	90.0%

motivationsciencedicho

		Value	Count	Percent
Standard Attributes	Position	168		
	Label	motivation science dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	16	14.5%
	1.00	Yes	94	85.5%

motivationflexibilitydicho

		Value	Count	Percent
Standard Attributes	Position	169		
	Label	motivation flexibility dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	20	18.2%
	1.00	Yes	90	81.8%

motivationschoolingdicho

		Value	Count	Percent
Standard Attributes	Position	170		
	Label	motivation schooling dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	78	70.9%
	1.00	Yes	32	29.1%

motivationsalarydicho

		Value	Count	Percent
Standard Attributes	Position	171		
	Label	motivation salary dicho		
	Type	Numeric		
	Format	F8.2		
	Measurement	Nominal		
	Role	Input		
Valid Values	.00	No	36	32.7%
	1.00	Yes	74	67.3%

VITA

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Doctor of Philosophy

Thesis: FACTORS THAT AFFECT NURSING STUDENTS' WILLINGNESS TO RESPOND TO DISASTERS

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