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Relationship Between Post-resuscitation Debriefings and Perceptions of Teamwork in Emergency Department Nurses

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This is to certify that the doctoral dissertation by

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Abstract

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Emergency Department Nurses

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MA, Walden University, 2011

BS, Wagner College, 2005

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Emergency department nurses are faced with traumatic patient events while functioning as members of multidisciplinary teams. Critical incident debriefing has been shown to benefit health care professionals and patient clinical outcomes. The purpose of this quantitative correlational study was to examine the relationship between the use of formal post resuscitation debriefings and perceptions of teamwork in emergency department nurses. The study also addressed the type and timing of debriefing to determine whether these factors impacted perceptions of teamwork. The nurse as wounded healer theory served as the theoretical framework. Data from the Nursing Teamwork Survey were collected from 68 emergency department nurses from across the United States. Data were analyzed using a statistical correlation coefficient. Results showed that when debriefings were done more frequently, were conducted using a formal debriefing method, and were held immediately after a situation, there was a positive correlation with higher levels of trust, team orientation, backup, shared mental model, and leadership. Findings may be used to increase utilization of debriefings and improve perceptions of teamwork among emergency department nurses, which may improve patient outcomes.

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Dedication

Without hesitation, this dissertation is dedicated to my three boys: my husband, Vinny, and our two boys, Tyler and Zack. Their unwavering support and love was the drive that kept me going.

Vin, you have been my rock throughout this entire process. You have encouraged me and kept the boys occupied and quiet so I could write countless times. You have saved me multiple times from complete meltdowns and directed me in the right path. You have been my computer guru this entire time as I had given up on several occasions. I would never have been able to do this without your support and computer expertise. I love you and despite what you say, you WILL refer to me as Doctor.

Ty and Zack, thanks for giving me the perfect balance of allowing me to have schoolwork time, with pulling me away to play Uno or have a catch. My love for you both goes beyond anything that can be measured. I hope in the future you understand all those hours I spent on schoolwork was to show you both how hard work and dedication pays off. You both can achieve anything you dream of.

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An immense acknowledgment to my RWJ pediatric ER team, who inspired this study. My amazing colleagues were open-minded to practice changes, listened to my lectures, and let me drone on about this topic. Each and every one of them amazes me every day with their compassion, dedication, and clinical skills.

To my mother and father, thank you for always supporting my decisions, for holding me accountable, and for encouraging me that I can do anything. I can only hope that I can instill the same values in my children that you both did for me.

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Chapter 1: Introduction to the Study

When emergency department nurses are faced with an acute critical and traumatic event, they must simultaneously carry out many complex tasks. During this situation, they must manage the care of the rapidly deteriorating patient, console the family, and deal with their own spiritual and emotional feelings while working in a multidisciplinary team. There is never a single person performing all tasks; rather, many people work together for a common goal. How emergency department nurses care for one another as part of the multidisciplinary health care team is an essential component to fostering teamwork, morale, and the ability to move forward to the next critical incident. This study poses the idea that debriefing can potentially aid in fostering and supporting teamwork. The value of debriefing in these types of events is bringing new recognition to those who can lend support in these circumstances (Emergency Nurses Association, 2013).

The American Heart Association and the American Academy of Pediatrics recommend clinical event debriefing after cardiac arrest and resuscitations (U.S. Department of Health and Human Services, 2019). Debriefing involves using a communication forum in which participants share information and process a particular incident. Debriefings originated in the military and have been integrated into aviation, business, the police, schools, and the medical field (Hunter, 2016, & Kaplan et al., 2001). Although the hospital is not a war zone, hospital personnel often share information about critical incidents as military personnel would.

Chapter 1 addresses the relationship between debriefings and simulation learning, quality of cardiopulmonary resuscitation (CPR), and caregivers' emotions, job satisfaction, and moral distress. At the time of the study, researchers had not examined the relationship between debriefings and effective teamwork. Because teamwork is an integral component of managing a critical incident in the emergency department, it is necessary to find tools that can support and improve teamwork. Chapter 1 includes a presentation of background information for the study followed by the problem statement, purpose, theoretical framework, and research questions. The nature and significance of the study are also presented, as well as limitations.

Background

Although the intent of this study was to address the most recent 5 years of literature related to the concept of debriefing, the search was expanded across an increased time frame to obtain key elements related to the history of debriefing. Debriefings have been in use since World War II, with soldiers reporting personal accounts to their superiors regarding combat and enemy strategy (Allen, Reiter-Palmon, Crowe, & Scott, 2018). Debriefing has been successfully used in emergency services professions (e.g., first responders, police officers, firefighters) as well as in military and airline industries after exposure to an unexpected traumatic event (Hokanson & Worth, 2000). Similar to first responders, emergency department (ED) nurses face stressful workloads with frequent exposure to death and human trauma, and may benefit from similar interventions (Schwab, Napolitano, Chevalier, & Pettorini-D'Amico, 2016). The

combination of cumulative stress and ineffective coping mechanisms increases the risk for moral distress in the ED registered nurse (Wolf et al., 2016).

Health care debriefings were adopted from the military and aviation models and implemented into clinical settings. Debriefings in health care have been shown to reduce events that endanger patient safety, such as falls (Reiter-Palmon, Kennel, Allen, Jones, & Skinner, 2015). The current study addressed the impact debriefings have on patient care and whether debriefings benefit health care providers.

Problem Statement

Resuscitations, the process of performing life-saving efforts to patients, are stressful situations that require the collaboration of team members to effectively manage the patient. Teamwork in health care organizations is an integral component of patient safety (World Health Organization, n.d.). Exposure to life-threatening situations, such as resuscitations, can have negative sequelae on those involved, including burnout (Ríos-Risquez & García-Izquierdo, 2016), compassion fatigue (Hinderer et al., 2014), and secondary trauma stress or post-traumatic stress disorder (Cieslak et al., 2015). Emergency department nurses have a higher than average turnover rate, which may be suspected by their frequent exposure to stressful, acute situations. Debriefings are conversations between people with the purpose of discussing and reflecting upon actions in patient care and discussing how to further incorporate improvement into future patient care (U.S. Department of Health and Human Services, 2018). Debriefings have been shown to decrease occupational stress and improve focus, morale, and professional

commitment (Healy & Tyrrell, 2013; Sandhu et al., 2014; Tannenbaum & Cerasoli, 2013).

Debriefings have been used across multiple disciplines since World War II for individuals to reconstruct events and deal with their psychological symptoms (Kaplan, Iancu, & Bodner, 2001). The ability of debriefings to reflect, identify errors, and make improvements serves as a useful tool for health care members in acute situations (Berg et al., 2014). Debriefings can be conducted in different manners and vary across professions and institutions. Debriefings can be formal with structured questions and content, or informal with no structured format. The timings of debriefings are referred to by temperature: Hot debriefings occur immediately after the event, warm debriefings occur within a few hours, and cold debriefings occur a few days after the event has passed. Each timing has its own set of advantages and disadvantages.

Researchers have focused on the impact of debriefings on the individual psyche and reflection. However, researchers have not examined the effect debriefings may have on the quality of interactions between staff members and the impact on teamwork, particularly within the emergency department. Also, researchers have not addressed whether the timing or format of debriefings has any relationship to teamwork. Communication within a debriefing can impact the outcome of the debriefing and should be investigated to determine its relation to team performance (Allen et al., 2018). Steinemann et al. (2015) suggested that research is needed on interprofessional knowledge and team roles within the use of debriefings. In the current study, I intended to close that gap by determining whether a relationship exists between debriefing use and

perceptions of teamwork in emergency department nurses. Although emergency care of patients is collaborative, this study focused only on nurses. Future studies may include physicians and other members of the health care team.

Purpose of the Study

The purpose of this study was to examine the relationship between postresuscitation debriefings and perceptions of teamwork in emergency department nurses. I also looked at the type of debriefing and timing of the debriefing to determine whether those impacted the relationship with teamwork in emergency department nurses. I used a survey to collect data on debriefing and perceptions of teamwork. That data were analyzed to determine whether there was a correlation between the two variables. Results from this study contributed to the literature on the association between debriefings and teamwork.

Research Questions and Hypotheses

RQ1: Is there a relationship between the frequency of postresuscitation debriefings and perceptions of teamwork in emergency department nurses?

H_o1: There is no relationship between frequency of postresuscitation debriefings and perceptions of teamwork in emergency department nurses.

H_a1: There is a relationship between frequency of postresuscitation debriefings and perceptions of teamwork in emergency department nurses.

RQ2: Is there a relationship between the type of debriefing conducted and the perceptions of teamwork in emergency department nurses?

*H*o2: There is no relationship between the type of debriefing and the perceptions of teamwork in emergency department nurses.

*H*a2: There is a relationship between the type of debriefing and the perceptions of teamwork in emergency department nurses.

RQ3: Is there a relationship between the timing of debriefings and the perceptions of teamwork in emergency department nurses?

*H*o3: There is no relationship between the timing of debriefings and perceptions of teamwork in emergency department nurses.

*H*a3: There is a relationship between the timing of debriefings and perceptions of teamwork in emergency department nurses.

Theoretical Framework

The theoretical basis for this study was Conti-O'Hare's (2002) nurse as wounded healer theory. The nurse as wounded healer theory is a middle range theory based on the work of psychologist Jung. In the nurse as wounded healer theory, a nurse experiences a traumatic event that makes her or him a walking wounded person, and the trauma affects her or his professional coping (Conti-O'Hare, 2002). The nurse will continue to perpetuate the cycle of being a walking wounded with job dissatisfaction and a negative work environment until something breaks the chain (Conti-O'Hare, 2002). Through a therapeutic process, the nurse can become a wounded healer who takes care of others and has a positive impact on the health care system (Conti-O'Hare, 2002). This theory can be used to build relationships and promote positive work environments (Christie & Jones, 2014). This theory is explained in greater detail in Chapter 2.

Nature of the Study

The nature of this study was a quantitative correlational design using a survey method. To examine the relationship between postresuscitation debriefings and teamwork, I used a correlation coefficient for analysis. Participants were recruited through the Emergency Nurses Association (ENA), which is the national organization of emergency department nurses. The survey was the Nursing Teamwork Survey (NTS) (Kalish, Lee, & Salas, 2010), which is a valid and reliable instrument (Kalisch, Lee, & Salas, 2010). Frequency if any, of debriefings was measured on a scale from never to always conducted. In addition, type of debriefing (formal, structured, or unstructured) and timing of debriefing were collected. Data collection also included participant demographics.

Definitions

Critical Incident: Any situation that creates a significant risk of substantial or serious harm to the physical or mental health, safety or well-being of any participant (U.S. Department of Health and Human Services, n.d.).

Debriefing: A dialogue between two or more people; its goals are to discuss the actions and thought processes involved in a situation, encourage reflection on those actions and thought processes, and incorporate improvements into future performance (U.S. Department of Health and Human Services, 2018).

Emergency department: The physical space in which the medical specialty dedicated to the diagnosis and treatment of unforeseen acute illness or injury exists (American College of Emergency Physicians, 2015).

Nurse: A person who has completed a program of generalized nursing education and is authorized by the appropriate regulatory authority to practice nursing care on patients (International Council of Nurses, 2019).

Teamwork: Coordinated effort on the part of a group of persons acting together in the interests of a common cause (Salas, Burke, & Cannon-Bowers, 2000).

Resuscitation: An emergent or life-saving process performed when the heart stops beating in order to improve the chance of survival (American Heart Association, 2018).

Walking wounded: An individual who remains physically, emotionally, and spiritually bound to previous trauma (Conti-O'Hare, 2002).

Wounded healer: Through self-reflection and spiritual growth, the individual achieves expanded consciousness, through which the trauma is processed, converted, and healed (Conti-O'Hare, 2002).

Assumptions

This study was based on the following assumptions:

1. Emergency department nurses would willingly take the survey and answer honestly.

2. Participants would be able to accurately recall frequency of debriefing participation.

Scope and Delimitations

Delimitation can occur from the inclusion and exclusion choices made by the researcher (Simon & Goes, 2013). The selection of the quantitative method over the qualitative method can be identified as a delimitation. Also, this study included only

emergency department nurses and their experience, if any, with debriefings. Nurses from other departments were not included in this study.

Limitations

Potential barriers were nurse self-reporting and recruitment of participants. Lack of knowledge of the percentage of emergency department nurses who participate in debriefings could have been a barrier to reliable findings.

Significance

The recent literature on debriefings in healthcare has focused on the individual and his or her personal coping mechanisms and ability to self-reflect. There have been limited studies on the relationship between debriefings and teamwork, and none have focused on the emergency department. The current study provided a new perspective on the topic by addressing the impact of debriefing from the individual to the team. The ability to perform as a member of a health care team is necessary for the provision of competent clinical care (Thistlethwaite & Dallest, 2014). Building a resilient team has been shown to be essential to allow nurses to withstand the challenging demands of the emergency department (Grover, Porter, & Morphet, 2017). Given that nearly 2.7 million deaths occur annually (Centers for Disease Control and Prevention, 2017) and a significant portion occur in hospitals, support needs to be available for nurses, such as debriefing, counseling, and education on end-of-life care (Hanna, & Romana, 2007). Findings from the current study may be applied to clinical practice in emergency departments to strengthen teamwork and improve patient outcomes.

The results of this study may provide insights into the relationship between debriefings and teamwork in the emergency department. Emergency department nurses may perceive a higher level of workplace stress due to traumatic events, death, and violence in the environment (Adriaenssens, De Gucht, & Maes, 2014). Results may provide information regarding debriefing as a mechanism for emergency department nurses to better cope and work together in a stressful environment. There are approximately 90,000 emergency nurses in the United States (Nurse Source, 2018), so findings may affect a large percentage of health care workers.

Emergency department nurses are more susceptible to turnover because they have an increased potential for burnout and compassion fatigue (Emergency Nurses Association, 2017). The national nurse turnover rate is currently 16.8%, and emergency department nurses exceeded the national average the past two years at 19.1% in 2016 and 20.2% in 2017 (NSI Nursing Solutions, 2018). Studies have shown that perceptions of teamwork can offset the stress and demands in emergency department nurses (Johnston et al., 2016). Findings from large organization studies indicated that team health climate is positively related to subjective reports of general health, mental health, and work ability (Schulz, Zacher, & Lippke, 2017). Building a resilient team has been shown to be essential to allow nurses to withstand the challenging demands of the emergency department (Grover et al., 2017). A positive correlation between debriefings and teamwork could lead to increasing participation in debriefings to improve perceptions of teamwork and reduce emergency department nurse turnover rates.

Summary

Emergency department nurses are exposed to acute, critical, and stressful patient care on a daily basis. They must function in a fast-paced environment in a team capacity to achieve optimal patient outcomes. Emergency department nurses have a higher than average turnover rate. Debriefing has been shown to improve personal and professional resilience to cope with the demands of the nursing profession. In this chapter, I introduced the concept of debriefing and its potential to aid in teamwork among emergency department nurses. The nurse as wounded healer theory was presented as the theoretical framework to support examination of the relationship between debriefings and perceptions of teamwork in emergency department nurses. Chapter 2 provides a review of the literature, as well as the history of debriefings.

Chapter 2: Literature Review

Resuscitations, the process of performing life-saving efforts to patients, are stressful situations that require the collaboration of a team to effectively manage the patient. Teamwork in health care organizations is identified as an integral component of patient safety (World Health Organization, n.d.). The ability to reflect, identify errors, and make improvements in debriefings serves as a useful tool for health care members in acute situations (Berg et al., 2014). The purpose of this study was to determine whether there is a relationship between postresuscitation debriefings and teamwork in emergency department nurses. This chapter presents a thorough and detailed review of the literature regarding the major concepts of debriefing and teamwork. Numerous sources were used to perform a literature search and are explained in this portion of the study.

Literature Search Strategy

I reviewed literature published from 2013 to the present, except for pivotal articles dating back to 1983, to understand the origins and history of debriefing. The search strategy involved the use of several online databases including CINHAL, Medline, EBSCO, PubMed, and Thoreau to search for key words and phrases. I also used the Google Scholar search engine. Key terms used in the literature search included *debriefing*, *post resuscitation debriefing*, *debriefing* and *death*, *debriefing* and *barriers*, *nursing* and *debriefing*, *incident stress debriefing*, *critical incident stress debriefing*, *debriefing* and *emergency department*, *emergency department* and *debriefing* and *barriers*, *teamwork in healthcare*, *teamwork* and *emergency department*, *nursing*

teamwork, *nursing* and *teamwork* and *emergency department*, and *nurse as wounded healer theory*.

Theoretical Foundation

The theoretical basis for this study was Conti-O'Hare's (2002) nurse as wounded healer theory. The nurse as wounded healer theory is a middle range theory based on the work of psychologist Jung. Jung argued that a healer's experiences of trauma and pain can be used to better help patients (Dunne, 2015).

In the nurse as wounded healer theory, a nurse experiences a traumatic event that makes him or her a walking wounded. The nurse will continue to perpetuate the cycle of being a walking wounded with job dissatisfaction and a negative work environment until something breaks the chain (Conti-O'Hare, 2002). Through a therapeutic process, the nurse can become a wounded healer to take care of others and have a positive impact on the health care system (Conti-O'Hare, 2002). This theory can be used to build relationships and promote positive work environments (Christie & Jones, 2014). There are three major stages in Conti-O'Hare's theory: the walking wounded, transformation, and transcendence. In the walking wounded stage, the nurse remains perpetually bound to a traumatic event. The transformation stage involves the ability to form new perceptions and acceptance, and transcendence is the ability to discover meaning and growth about the incident (Schwab, Napolitano, Chevalier, & Pettorini-D'Amico, 2016). According to this theory, if trauma is dealt with effectively, the nurse can transcend the experience to build better therapeutic relationships. The nurse as wounded healer theory has four key concepts: (a) traumatized individuals may pass from walking wounded to wounded

healer; (b) nurses become wounded healers after recognizing, transforming, and transcending the trauma; (c) wounded healers become able to use themselves therapeutically to help others; and (d) wounded healers will have a positive impact on the health care system, society, and the nursing profession as a whole (Conti-O'Hare, 2002).

The nurse as wounded healer theory was used to support the construct of post-traumatic stress disorder (PTSD) in the nursing profession (Shamia, Thabet, & Vostanis, 2015), as well as secondary traumatic stress in emergency nurses (Ratrout & Hamdan-Mansour, 2017). In addition, the theory has provided the framework for examining lateral/horizontal violence within the nursing profession. This theory was selected to demonstrate the potential for emergency room nurses to reflect on critical incidents that they are exposed to in their workplace and thereby improve teamwork. Debriefings have the ability to offer that reflective process. Through debriefings, emergency nurses are able to discuss critical incidents with their team members. Debriefing sessions may provide the opportunity to have a positive effect on teamwork.

Literature Review

In the current study, participation in resuscitation was the traumatic event that the nurse was exposed to making him- or herself a walking wounded. Conti-O'Hare (2002) described the use of reflective practice as an effective tool to improve practice. Through the process of debriefing, the nurse will become a wounded healer and have a positive impact on teamwork and interpersonal relationships with colleagues. The transformation into a wounded healer creates a more positive work environment.

History of Debriefing

Debriefing began in the military during World War II in the 1940s. During this time United States General Atwood Marshall began conducting interviews after combat to reconstruct the events (Garnder, 2013). The interviews became a process in which soldiers reviewed and assessed the combat, and the military was able to create strategies for future missions (Gardner, 2013). Performance critiques also emerged in which soldiers performed simulated battles and superiors provided feedback to the participants (Gardner, 2013). These processes combined and eventually came to be known as the after action review (Gardner, 2013). In the early 1970s, the U.S. Army Research Institute for the Behavioral and Social Sciences transitioned the critique into a process based on performance indicators and group discussions for self-reflection (Gardner, 2013).

The 1972 crash of Flight 401 in the Everglades yielded the aviation industry's crew resource management (Gardner, 2013). Crew resource management (CRM) training is the process of debriefing and feedback to the entire flight crew post-flight (Gardner, 2013). CRM is coupled with flight simulation training to provide thorough, well-rounded feedback. CRM debriefings are still conducted after every flight, and are referred to as postflight checks (Wagener & Ison, 2014).

In 1974, Mitchell created the critical incident stress debriefing (CISD) for distressed first responders who witnessed an airplane crash in Washington D.C. (Mitchell, 2018). CISD is a specialized form of debriefing for addressing issues related to traumatic events for individuals to deal with their physical and psychological symptoms (Mitchell, 1983). The CISD intervention was initially used for those who were victims of

a major event or first responders to the event (Maloney, 2012). The CISD model

developed by Mitchell has three main objectives: (a) the mitigation of the impact of a

traumatic incident, (b) the facilitation of the normal recovery processes and a restoration

of adaptive functions in psychologically healthy people who are distressed by an

unusually disturbing event, and (c) the opportunity to identify group members who might

benefit from additional support services or a referral for professional care (Mitchell,

1993). Organizations that have adopted the CISD model include the United States Armed

Services, the United States Department of Transportation and Aviation, Federal

Emergency Management Agency, School Crisis Response Teams, and the National

Employee Assistance Program (Caine & Ter-Bagdasarian, 2003; Pender & Prichard,

2009).

CISD has been used across multiple disciplines. Police officers who received

CISD within 24 hours of a traumatic event were found to be less depressed, less angry,

and had fewer stress symptoms at 3 months than their non debriefed colleagues (Bohl,

1991). Emergency welfare workers who participated in traumatic events stated they had

experienced symptom reduction after CISD attendance (Robinson & Mitchell, 1993).

Firefighters who participated in CISD showed lower anxiety symptoms 3 months after an

incident compared to those who did not participate (Bohl, 1995). In 1994 over 900 people

died on the sinking ferry Estonia, and symptoms of PTSD were lower in the group of

emergency personnel who received CISD compared to those who did not (Nurmi, 1999).

After a mass shooting in which 23 people were killed, emergency medical personnel who

participated in CISD showed increased recovery and decreased depression compared to

those who did not participate (Jenkins, 1996). After a significant hurricane, crisis workers who attended CISD showed reduced posttraumatic stress symptoms (Chemtob, Tomas, Law, & Cremniter, 1997). People working in New York City at the time of the September 11th attacks who were offered CISD displayed positive effects for an array of outcomes, including lower levels of alcohol, dependency, anxiety, PTSD symptoms, and depression, compared to workers who did not receive crisis intervention services (Boscarino, Adams, & Figley, 2005).

Debriefings in the medical field initially focused on patient safety (Allen et al., 2018). To address the issue of medical errors, the health care industry looked to the military and aviation industries and their use of debriefings (Gordon, Mendenhall, & O'Connor, 2013). In the late 1980s anesthesiologist David Gaba translated the aviation's crew resource management into crisis resource management. Gaba introduced this concept for use with patient simulators used in training to provide feedback (Green, Tariq, & Green, 2016). Gaba valued debriefing as an integral component of experiential learning (Howard, Gaba, Fish, Yang, & Sarnquist, 1992).

The plus-delta debriefing model is based on aviation and became modified for health care for debriefings after a clinical event. In the plus-delta model, the plus column indicates what went well and the delta column indicates what needed improvement so that individuals can learn how to work together (Gardner, 2013). Debriefings in health care have been shown to reduce events that endanger patient safety, such as falls (Reiter-Palmon et al., 2015).

Debriefing Defined

Effective management of life-threatening emergencies, or critical incidents, is a key component of emergency management of patients. These incidents can be unexpected and overwhelming, and can place a great strain on the medical team members' ability to cope. Exposure to life-threatening situations can have negative sequelae on those involved, including burnout (Ríos-Risquez & García-Izquierdo, 2016), compassion fatigue (Hinderer et al., 2014), and secondary trauma stress or PTSD (Cieslak et al., 2015).

Debriefing is defined as a dialogue between two or more people; its goals are to discuss the actions and thought processes involved in a particular patient care situation, encourage reflection on those actions and thought processes, and incorporate improvements into future performance (U.S. Department of Health and Human Services, 2018). Debriefings are generally conversations addressing a particular incident. During the conversation, participants reflect on the experience, including what went right, what needed improvement, how to move forward, and emotions that were elicited (U.S. Department of Health and Human Services, 2018). Debriefing is a useful tool that can support health care professionals exposed to stressful situations (Harrison & Wu, 2017). The purpose of debriefings in health care is to promote discussions and reflection and improve behaviors in practice (Mullan, Wuestner, Kerr, Christopher, & Patel, 2013). Debriefing is an opportunity for staff to gain support, initiate communication, and improve performance. Debriefing is used to reduce distress and restore group cohesion and unit performance for a homogeneous group of people who have encountered the

same critical incident (Mitchell, 1986). For best practice, debriefs should include an opportunity to discuss and investigate information from the event, reflect on positive and negative behaviors and outcomes, discuss near misses, and consider ways to improve performance in the future (Kolbe, Grande, & Spahn, 2015).

Throughout the years, the term debriefing has been combined with other ideas and referred to by various other names. At times, it has been referred to as critiques, after-action reviews, after-event huddles, huddles, hot washes, and postmortems (Allen et al., 2018). Defusing is a similar concept, however it is used solely to vent emotions (Kessler, Cheng, & Mullan, 2015).

Debriefings can be conducted in different manners and can vary across professions and institutions. Debriefings can be formal with structured questions and content, or informal with no structured format (US Department of Health and Human Services, 2019). The timings of debriefings are referred to by temperature. Hot debriefings occur immediately after the event, warm debriefings occur within a few hours, and cold debriefings occur a few days after the event has passed (Kessler et al.,2015). The timings have their unique advantages and disadvantages. Hot and warm debriefings have the advantage of having the entire team available and present, which can allow urgent needs to be addressed. Hot debriefings have also shown to have advantages of minimizing recall bias (Kessler et al., 2015). Potential disadvantages to hot and warm debriefings include limited time and available physical space as well as the emotional willingness of members to debrief (Kessler et al., 2015). An advantage of cold debriefings is the ability to have follow-up patient information and outcomes (Kessler et

al., 2015). Disadvantages of cold debriefings include the challenge of reassembling the entire team, and recall bias due to the lapse in time (Kessler et al., 2015). Mitchell (1988) argued that the longer the time between the event and the debriefing, the less effective the debriefing will be for participants.

Debriefing Effects

The ability to reflect, identify errors, and make improvements in debriefings serves as a useful tool for health care members (Berg et al., 2014). Debriefings have been shown to decrease occupational stress and improve focus, morale, and professional commitment (Healy & Tyrrell, 2013; Sandhu et al., 2014; Tannenbaum & Cerasoli, 2013). Conrad and Morrison (2018) conducted a systematic review and found that health care providers view debriefing positively, it improves their ability to manage grief, and it decreases reported symptoms of PTSD. Surveyed nurses reported benefits from debriefing in both personal and professional needs categories (Clark & McLean, 2018). The implementation of debriefings via Crisis Resource Management showed improved situational awareness and decreased reported stress levels (Katinakis, & Spronk, 2016). Debriefing in real-time has been established as an integral component of effective clinical education, quality improvement, and systems learning (US Department of Health and Human Services, 2018). Implementing a structured debriefing process showed to encourage feedback that resulted in various recommendations for change to clinical practice across Calgary area adult emergency departments (Rose & Cheng, 2018).

Debriefing and Postresuscitation

Effective communication, teamwork and skills are necessary for patients requiring cardiopulmonary resuscitation. American Heart Association guidelines recommend that teams use postresuscitation debriefings to improve performance (Banji, Donoghue, Wolff, et al., 2015). Postresuscitation debriefings have shown improved cooperation, communication and situational awareness (Mullen, Wuestner, Kerr, Christopher, & Patel, 2012). The facilitation of postresuscitation debriefings for staff has shown to contribute to enhanced morale, improved staff retention, and better patient care interactions (Berg et al., 2016; Kessler et al., 2015). Debriefings have also shown improvements in cardiopulmonary resuscitation quality (Bhanji, Donoghue, Wolff, Flores, Halamek, Berman, et. al, 2015). After the implementation of trauma postresuscitation debriefings, improvements were shown in patient care communication, workload, and more agreeable to give and receive feedback (Berg, Hervey, Basham-Saif, Parsons, Acuna, & Lippoldt, 2014). Implementation of a postcode pause at a trauma center showed improved ability to regroup before returning to work, and ability to pay homage to the patient (Copeland & Liska, 2016). Intensive care nurses who participated in postresuscitation debriefings self-reported that it allowed them to develop both in their role as a nurse and as a team member, and discussed the importance of talking about troubling events so that they "did not bring adverse feelings home with them" (Sjoberg, Schonnin and Salzman-Erikson, 2015).

Debriefing in the Emergency Department

Emergency department nurses may sense a higher level of workplace stress due to traumatic events, death and violence in the workplace (Adriaenssens, De Gucht, & Maes, 2014). Emergency department nurses have a higher prevalence of PTSD than in the general population (Schwab, Napolitano, Chevalier, & Pettorini-D'Amico, 2016). Emergency department workers are particularly susceptible to moral distress and compassion fatigue, due to the frequent exposure to critical incidents (Hammerle, Devendorf, Murray, & McGhee, 2018). In the emergency department, due to repeated exposure to high acuity patients and high volume, nurses need the opportunity to have debriefings emphasize the feelings of resiliency to compassion fatigue (Schmidt & Haglund, 2017). In severe cases where emotional distress is unresolved or left untreated, hospital emergency personnel are at risk for developing Post-Traumatic Stress Disorder (de Boer et al., 2011)

Debriefing sessions not only allow emergency department staff to express their feelings and emotions, but also allows for discussions on how to improve future performance (Kessler, Cheng, & Mullan, 2014). Emergency department staff revealed that debriefing sessions after critical events are "important" or "very important" (Healy & Tyrrell, 2013). Emergency department nurses reported that debriefings should be mandated following CPR and traumatic events, and are helpful when dealing with emotions (Ross-Adjie, Leslie, & Gillman, 2007).

The emergency department presents itself with a unique set of barriers compared to other environments for debriefings to occur. A study of Canadian emergency

department physicians and nurses found that debriefings were occurring in less than 25%

of resuscitations. (Sandhu et al, 2014). Similarly, a study of United States pediatric

emergency fellows also reported a less than 25% debriefing occurrence (Zinns,

O'Connell, Mullan, Ryan, & Wratney, 2015). Unlike regular hospital units that can delay

admissions to allow time for staff to recover and proceed, the emergency department is a

revolving door of patients, injuries and sickness. One identified barrier that emergency

department nurses could not attend debriefing sessions was due to being unable to be

relieved from their duties (Ross-Adjie, 2007). Emergency department care demands

affect not just nurses, but also impact physician availability to help facilitate debriefings

(Rose & Cheng, 2018). In a national needs assessment of emergency departments in

Canada, 90.4% indicated that emergency workload and time shortages are major barriers

to effective debriefing (Sandhu et al, 2014). A main conclusion of a 2013 study informed

that there is a lack of formal debriefing policies in the emergency department, yet it

should be implemented to reduce the stress effects on staff members (Healy & Tyrell,

2013). Despite their benefits, post incident debriefings occur infrequently in most

healthcare settings (Eppich, Mullan, Brett-Flegler, & Cheng, 2016).

Debriefing and Simulation

Simulation is a technique used in healthcare to replace real clinical emergent

situations with guided experiences in a fully interactive method. Debriefing is an integral

and critical part of the simulation process (Levett-Jones & Lapkin, 2013). The National

League for Nursing (2015) has the position that nursing schools should have debriefings

incorporated into their simulation learning. Post simulation debriefings allowed students

to become active participants in the learning process which bolstered their clinical judgment and performance (Sabei & Lasater, 2016). Incorporating debriefing into simulation has shown to enhance learning and heighten learner self-confidence (Decker, Fey, Sideras, Caballero, Rockstraw, Boese, Franklin, Gloe, Lioce, Sando, Meakim, & Borum, 2013). Simulation debriefings have shown a significant impact on cognitive, psychosocial and affective areas (Coutinho, Parreira, Martins, Cabral, Duarte, Amaral, & Pereira, 2016). While participating in simulations, nursing students reported debriefings as the most important component for gaining clinical judgment (Kelly, Hager, & Gallagher, 2014). The inclusion of reflective debriefings with simulations for nurse practitioner students led to a significant increase in critical thinking skills (Morse, 2015). Debriefing is a main component in the learning process with simulations, it provides learners opportunities to reflect on simulated clinical events, identify and analyze areas of strength and/or areas for improvement, solutions to problems, and applications to future clinical practice (Cheng, Grant, Robinson, Catena, Lachapelle, Kim, Adler, & Eppich, 2016). Post-simulation debriefing that include goal setting have been shown to improve teamwork performance (Gardner, Kosemund, Hogg, Heymann, & Martinez, 2017). Healthcare students report that post simulation debriefing allowed them to be more prepared to work in an interdisciplinary team (Andersen, Coverdale, Kelly, & Forster, 2018). Nursing students who participated in simulation debriefings reported that it improved their skills by allowing them to feel more comfortable to open communication, and ask questions with their colleagues (Coutinho, Parreira, Martins, Cabral, Duarte, Amaral, & Pereira, 2016).

In addition to clinical learning, participants in simulation debriefing have also had the opportunity to debrief their own personal experience (Verkuyl, Lapum, St-Amant, Betts, & Hughes, 2017). During simulation debriefings, learners are encouraged to reflect not only on simulation events, but also their own thought processes, their emotions experienced, and their decisions made (Cockerham, 2015; Fey, Scrandis, Daniels, & Haut, 2014).

Teamwork in Health Care

Teamwork in healthcare is defined as a process involving two or more individuals, sharing common health goals and exercising collaborative efforts for patient care outcomes (Xyrichis, & Ream, 2008). Healthcare is a complex system that requires the coordination of team members in a high-stressful environment. As such, teamwork is an important component of healthcare delivery, it involves communication and collaboration for a common goal. Teamwork in healthcare organizations is identified as an integral component of patient safety (World Health Organization, n.d.). In 1999, the Institute of Medicine (IOM) issued the sentinel report, To Err is Human: Building a Safer Health System, which highlighted medical errors due to dysfunctional teamwork (Lerner, Magrane, Friedman, 2009).

With the population aging and the prevalence of chronic disease, there is a need for improved interprofessional teamwork (Blumenthal et al, 2016). The increasing complexity of patients attributes to bedside nursing as being a high-stress profession (Rushton, Caldwell, & Kurtz, 2016). The ability to perform as a member of the healthcare team is necessary for the provision of competent clinical care (Thistlethwaite & Dallest,

2014). Positive associations have been found between patients' self-reported satisfaction with their care and higher performing inpatient teams (Lyu, Wick, Housman, Freischlag, & Makary, 2013). Patient satisfaction and willingness to comply to treatment regimen are highly correlated with patients' perceptions of emergency department staff teamwork (Kipnis, Rhodes, Burchill, & Datner, 2013). In the emergency department, the practice of teamwork has shown to improve job satisfaction and the ability to manage workload collectively (Ajeigbe, McNeese-Smith, Phillips, & Leach, 2014) . A large-scale survey by the U.K. National Health Service revealed that degree to which healthcare workers reported conducting their work in effective teams was associated with a range of patient outcomes, including rates of errors, and patient mortality (Lyubovnikova, West, Dawson, & Carter, 2015).

A meta-analysis of teamwork studies have shown numerous replications of the connections between quality of teamwork and both patient and healthcare provider outcomes (Rosen, DiazGranados, Dietz, Benishek, Thompson, Pronovost, & Weaver, 2018). Hospitals in which staff report higher levels of teamwork (i.e., clear roles) have lower rates of workplace injuries and illness, experiences of workplace harassment and violence, as well as lower levels of staff intent to leave the organization (Lyubovnikova et al., 2015).

With respect to debriefings and teamwork, there have been several studies highlighting its benefits it areas other than the emergency department. Debriefings in the operating room have been shown to improve teamwork (Law, Hildebrand, Oliveira-Gomes, Hallbeck, & Blocker, 2014). In post simulation debriefings, groups that

performed goal-setting were shown to have improved teamwork performance (Gardner, Kosemund, Hog, Heymann, & Martinez, 2017). Reviews of trauma resuscitations without debriefings showed a disconnect in perceptions of responsibility and teamwork (Steinemann, Kurasowa, Wei, Lin, et al 2017).

Future Research

It has been suggested that the communication and interaction within a debriefing can impact its outcome, and should be investigated to determine its relation to team performance (Allen, Reiter-Palmon, Crowe, & Scott, 2018). Debriefing sessions are a valuable tool for healthcare professionals, yet they are not practiced enough (Rivera-Chiauzzi et al., 2016). Elements of CISD programs are beginning to be used in some hospital settings, but outcomes have not been closely examined (Schwab, Napolitano, Chevalier, & Pettorini-D'Amico, 2016). Further research is needed in order to identify strategies that are effective in overcoming barriers that prevent debriefings from being conducted (Clark & McLean, 2018). Future research is needed to determine how real-time critical incident debriefing can be more effectively evaluated and more widely utilized (US Department of Health and Human Services, 2018). Additional research is needed to identify barriers to hot debriefings and to evaluate the impact of hot debriefings on the resuscitation process and patient outcomes (Sweberg, Sen, Mullan, Cheng, Knight, delCastillo, Ikeyama, Seshadri, Hazinski, Raymond, Niles, Nadkarni, & Walfe, 2018). Future research is needed on interprofessional knowledge and team roles within the use of debriefings (Steinemann, Kurosawa, Wei, Ho, Lim, Suares, Bhatt, and Berg, 2015).

Summary and Conclusions

In this chapter I provided insights into the history of debriefings, as well as the many researched benefits. Debriefings have been shown to improve morale, patient outcomes, and clinical judgements. Major themes in the literature have shown positive relationships between debriefings and simulation, patient care in the emergency department, as well as resuscitation efforts. The literature analysis found that nurses view debriefings positively, and that it aides in personal and professional stress. Teamwork was also discussed as an integral component of patient care, particularly in critical situation. Despite the many highlighted benefits, there has been a paucity of literature on debriefings' interpersonal effects, in particular a gap in knowledge with any relationship with teamwork. Chapter 3 will explore the methodology to be used in this study.

Chapter 3: Research Method

The purpose of this quantitative correlational study was to explore the possible relationship between postresuscitation debriefings and emergency department nurses' perceptions of teamwork. Emergency department nurses completed a survey on nursing teamwork, as well as frequency and type of debriefings. Conti-O'Hare's nurse as wounded healer theory was the theoretical framework for this study. This chapter provides information about the research design and rationale, the population, and the sample included in this study. In addition, the instrumentation and threats to validity are discussed. Lastly, protection of human subjects is explained. A summary concludes this chapter.

Research Design and Rationale

The design of this study was quantitative correlational using a survey method. A correlation coefficient was used for analysis of the relationship between postresuscitation debriefings and perceptions of teamwork. The data collection survey was the Nursing Teamwork Survey (Kalisch et al., 2010), a valid and reliable instrument whose permission was obtained from the developer for use in this study (see Appendix C). Frequency of debriefings was measured on a scale from never to always conducted. Data collection also included participant demographics (i.e., gender, age) and the type of debriefings used. Data regarding frequency, type, and timing of debriefings were used to answer the research questions. Because the research questions addressed emergency department nurses, a survey method was used to elicit first-hand responses from the participants.

Methodology

Population

Participants included registered nurses who were employed as emergency

department nurses in the United States. I defined the target population as nurses who

were registered with active nursing licenses and were over the age of 18 years. The

population included registered nurses without limitations on gender, age (if older than 18

years), or ethnicity.

Sample Size

To compute the sample size, I used GPower 3.1 software developed by Faul,

Erdfelder, Buchner, and Lang (2009). Using the GPower software, I performed a power

analysis for Pearson correlation as expressed as a linear regression model with one

predictor. The conventional alpha (level of significance) value for the study was set at $\alpha =$

.05, the power was set at .80, and the medium effect size was set at .15. According to

these values, the sample required 55 participants to achieve significance.

Data Collection

Participants were recruited via mailing list by the Emergency Nurses Association

(ENA). The ENA includes approximately 40,000 nurses from every state. The ENA

offers a membership database that contains over 40,000 names and addresses of ENA

members across the United States. After obtaining approval from the Walden University

institutional review board (06-24-19-015115), I sent an application to the ENA for access

to members on the mailing list. After approval from the ENA, surveys were mailed for

recruitment. Mailings included explanation of the study, the survey, basic demographic

collection, and a stamped return address envelope. There was also a statement for consent

and assurance of confidentiality that there would be no identifying information collected.

There was also a website link for a Survey Monkey if members chose to participate

electronically. Five hundred surveys were mailed to ENA members. Having participants

recruited through the ENA allowed for greater access to nurses with various experiences

with debriefings. Although the mailing list was obtained from the ENA, the organization

does not support or endorse this study.

Instrument

The method of data collection was the Nursing Teamwork Survey (NTS) tool.

The NTS was created by Kalisch et al. (2010) to assess nursing teamwork in hospitals.

The NTS is a 33-item questionnaire in which responses are measured on a 5-point Likert-

type scaling system (1 = rarely, 2 = 25% of the time, 3 = 50% of the time, 4 = 75% of the

time, and 5 = always). A higher score is reflective of a higher level of nursing teamwork.

The NTS is scored in five subscales: trust (7 items), team orientation (9 items), backup (6

items), shared mental model (7 items), and team leadership (4 items) (see Appendix B).

The trust subscale is used to measure whether team members trust that their team

members will complete their responsibilities on a consistent basis (Kalisch, Lee, & Salas,

2010). The team orientation subscale is used to measure the extent to which the team's

needs are more important than the individual (Kalisch, Lee, & Salas, 2010). The backup

subscale is used to measure the willingness of team members to help one another when

they identify that someone is busy or overloaded with work (Kalisch, Lee, & Salas,

2010). The shared mental model subscale is used to measure the extent to which team

members understand their roles and responsibilities so that all team members work toward the common goal (Kalisch, Lee, & Salas, 2010). The team leadership subscale is used to measure the presence of guidance, support, and coordination for the team (Kalisch et al., 2010). Prior to the development of the NTS, no acceptable, reliable, and valid survey instrument existed that differentiated between the levels of nursing teamwork on inpatient units in acute care hospitals.

Kalisch initially identified that patient care and unit operations are affected by lack of nursing teamwork (Kalisch & Begeny, 2005). In 2009, Kalisch and colleagues conducted a qualitative study through the framework of the Salas Big Five to determine core nursing teamwork components. An outcome of the 2009 study was the need to validate results, from which Kalisch et al. developed and tested the NTS.

To test the psychometric soundness of the NTS, Kalisch et al. (2010) administered the test in a large academic hospital with 1,758 nurse participants. Content validity was established by a panel of experts. The content validity for the NTS index was 91.2%. Test-retest reliability was identified: $r = .92$ for overall 33 items, $r = .77$ to $.87$ for the five subscales, and internal consistency ($\alpha = .94$ for overall items, $\alpha = .74$ to $.85$ for the subscales). As a result, the NTS was deemed to have good psychometric properties.

Kalisch used the NTS is studies in 2009, 2010, 2012, and 2013 to draw correlations with nursing characteristics and NTS scores. The NTS has been positively related to higher staffing levels (Kalisch, 2011), job satisfaction (Kalisch, 2010), and missed nursing care (Kalisch, 2012). The psychometric properties of the NTS was tested in an Icelandic translated questionnaire. The 2016 study showed the NTS-Icelandic to be

valid and reliable, thereby supporting its international use (Bragadóttir, Kalisch, Smáradóttir, & Jónsdóttir, 2016).

Data Analysis

Participant demographics from the surveys were analyzed using simple descriptive statistics. A Pearson correlation as expressed as a linear regression model with one predictor was used to determine the level of the relationship between debriefings and perception of teamwork in emergency department nurses.

Threats to Validity

Nonresponse bias occurs when survey respondents differ in significant ways from nonrespondents (Creswell, 2009). To minimize this threat, I mailed the survey via a large national organization, which granted access to a larger population. Doing so enabled access to more potential respondents. Another way to mitigate this threat was not collecting personal identifying information.

The Hawthorne effect was another possible threat to validity because the participants may have altered their responses according to what they thought I would consider to be a good response. Limitations also included the fact that the data were self-reported, so the accuracy of the answers could not be objectively assessed. Although construct validity is a common threat in survey studies, the use of a valid and reliable tool alleviated that threat.

Protection of Human Subjects and Ethics

This study was reviewed by the Walden University IRB. No data were collected until IRB approval was granted. Only legal adults were permitted to join the study.

Choosing to participate in the study acted as informed consent. All information was kept confidential, and no identifying information was collected. All of the responses were anonymous, and there was no identifying responses collected. Research reports contained data in forms that did not permit individual participants to be identified. Data will be kept for 5 years in a locked cabinet and in a password-protected computer at my home.

Summary

In this chapter I introduced the methodology and research design of this study. Threats to validity and protection of human subjects were also discussed. The purpose of this quantitative study was to examine the relationship between postresuscitation debriefings and the perceptions of teamwork in emergency department nurses. I used a survey method and a correlation coefficient to analyze the relationship between postresuscitation debriefings and teamwork. GPower analysis was used to determine sample size, and the population consisted of currently registered emergency department nurses who were accessed via the Emergency Nurses Association. Chapter 4 will present the findings from the study.

Chapter 4: Results

The purpose of this study was to determine whether there was a relationship between postresuscitation debriefings and perceptions of teamwork in emergency department nurses. I also looked at the type of debriefing and timing to determine whether those impacted the relationship with teamwork in emergency department nurses. Survey data from 68 nurses were used. Table 1 displays the frequency counts for selected variables. Table 2 displays the frequency counts for the debriefing variables. Table 3 displays the psychometric characteristics for the six NTS aggregated scale scores. Table 4 displays the total NTS score based on each of three debriefing scores to answer the three research questions. As additional findings, Tables 5 through 7 display the Spearman correlations for selected variables with the six NTS scores. In this chapter I explain the process of data analysis, present the results, and interpret the findings with regard to answering each research question.

Data Collection

I used a quantitative survey design. Participants were recruited via mailing list by the Emergency Nurses Association (ENA). The ENA consists of approximately 40,000 members. There were 500 mailed surveys distributed to ENA members, with a 15.6% response rate ($N = 78$). Surveys were distributed, and I allowed for 6 weeks for response time. Data were collected using the Nursing Teamwork Survey, which was shown to be a valid and reliable scale in statistical analysis (Kalisch, 2010). There were initially 78 survey responses; however, six surveys were excluded for missing more than two responses, and four were removed as univariate outliers, which reduced the sample to 68.

Results

Descriptive Statistics

Table 1 displays the frequency counts for selected variables. Respondents lived in 27 states with the most common being Michigan (10.3%), Illinois (8.8%), Maine (7.4%), and Ohio (7.4%). Most of the nurses had either a bachelor's degree (52.9%) or a graduate degree (32.4%). Most (85.3%) were female. Ages of the nurses ranged from 25 to 34 years (26.5%) to 65 years and over (4.4%) with the median age of 39.50 years. As for experience, over half (55.9%) had over 10 years of experience. When surveyed as to whether they worked in a pediatric, adult, or combined emergency department, 83.8% reported working in a combined setting.

Table 1

Frequency Counts for Selected Variables (N = 68)

Variable	Category	n	%
State			
	Michigan	7	10.3
	Illinois	6	8.8
	Maine	5	7.4
	Ohio	5	7.4
	Other states	45	66.2
Education			
	Associate's degree	10	14.7
	Bachelor's degree	36	52.9
	Graduate degree	22	32.4
Gender			
	Female	58	85.3
	Male	10	14.7
Age			
	25 to 34 years	18	26.5
	35 to 44 years	19	27.9
	45 to 54 years	14	20.6
	55 to 64 years	14	20.6
	65 years and over	3	4.4
Experience			
	6 months to 2 years	3	4.4
	2 to 5 years	10	14.7
	5 to 10 years	17	25.0
	Over 10 years	38	55.9
Combined emergency department			
	No	11	16.2
	Yes	57	83.8

Table 2 displays the frequency counts for the three debriefing variables. These variables included the frequency of debriefing as well as the timing and the formality level of the briefing. Twenty-one percent of the sample reported never having debriefings after the incidents. As for the frequency of debriefings, almost two thirds of the sample (63.3%) had debriefings between 25% to 50% of the time. Three quarters of the sample had their debriefings either immediately after or soon after the incident. As for the formality level of the debriefing, the most common approach was informal (60.3%).

Table 2

*Frequency Counts for Debriefing Variables (*N *= 68)*

Variable	Category	n	%
Frequency of debriefings			
	Never	14	20.6
	25% of the time	28	41.2
	50% of the time	15	22.1
	75% of the time	8	11.8
	Always	3	4.4
Timing of debriefings			
	Do not debrief	14	20.6
	Cold (after delay)	3	4.4
	Warm (soon after)	34	50.0
	Hot (immediately after)	17	25.0
Formality level of debriefing			
	Do not debrief	14	20.6
	Informal debrief	41	60.3
	Formal debrief	13	19.1

Table 3 displays the psychometric characteristics for the six aggregated NTS scale scores. These scales were based on a 5-point scale: 1 = *rarely* to 5 = *always*. The total score had a mean of 3.52. Among the five subscales scores, the highest mean was for shared mental model (*M* = 3.93) while the lowest subscale score was for team orientation (*M* = 3.30). Cronbach's alpha reliability coefficients ranged in size from.75 to.95 with the median alpha coefficient of .85. This suggested that all scales had acceptable levels of internal reliability (see Creswell, 2009).

Table 3

*Psychometric Characteristics for the Aggregated Scale Scores (*N = 68)

Scale Score	Number of Items	Low	High	*M*	*SD*	α
Total Score	33	2.21	4.67	3.52	0.57	.95
Trust Score	7	1.86	5.00	3.33	0.72	.86
Team Orientation Score	9	2.22	4.67	3.30	0.58	.75
Backup Score	6	2.17	4.67	3.53	0.66	.83
Shared Mental Model Score	7	2.43	5.00	3.93	0.60	.88
Team Leadership Score	4	1.25	5.00	3.58	0.80	.82

Answering the Research Questions

Research Question 1 was the following: Is there a relationship between the frequency of postresuscitation debriefings and perceptions of teamwork in emergency department nurses? The related null hypothesis was the following: There is no relationship between frequency of postresuscitation debriefings and perceptions of teamwork in emergency department nurses. Table 4 displays the total NTS score based

on the frequency of debriefing. Results indicated significant differences in the NTS total score based on the frequency of the debriefing ($\eta = .41$, $p = .02$). Scheffe post hoc tests indicated no significant differences between the frequency categories for the NTS total score. This combination of findings provided support to reject the null hypothesis.

Table 4

Total NTS Score Based on Selected Debriefing Scores (N = 68)

Debriefing score	Category	n	M	SD	η	F	p
Type of debriefing [a]					.36	4.73	.01
	1. Do not debrief	14	3.28	0.64			
	2. Informal debrief	41	3.47	0.50			
	3. Formal debrief	13	3.90	0.55			
Frequency of debriefing [b]					.41	3.24	.02
	1. Never	14	3.28	0.64			
	2. 25% of the time	28	3.43	0.49			
	3. 50% of the time	15	3.52	0.61			
	4. 75% of the time	8	3.99	0.24			
	5. Always	3	4.07	0.47			
Timing of debriefings [c]					.36	3.18	.03
	1. Do not debrief	14	3.28	0.64			
	2. Cold (after delay)	3	3.45	0.85			
	3. Warm (soon after)	34	3.45	0.47			
	4. Hot (immediately after)	17	3.85	0.54			

[a] Scheffe post hoc tests: 3 > 1, 2 ($p < .05$); no other pair of means were significantly different.
[b] Scheffe post hoc tests: no pair of means were significantly different at the $p < .05$ level.
[c] Scheffe post hoc tests: 4 > 1 ($p < .05$); no other pair of means were significantly different.

Research Question 2 was the following: Is there a relationship between the type of debriefing conducted and the perceptions of teamwork in emergency department nurses? The related null hypothesis was the following: There is no relationship between types of debriefings and the perception of teamwork in emergency department nurses. Table 4 displays the total NTS score based on the type of debriefing. A one-way ANOVA test and eta coefficient (relationship between a categorical variable and a continuous variable) were used. Results indicated significant differences in the NTS total score based on type of debriefing ($\eta = .36$, $p = .01$). Scheffe post hoc tests indicated the NTS total score to be significantly higher during a formal debriefing ($M = 3.90$) than during an informal debriefing or in situations where no debriefing occurred. This combination of findings provided support to reject the null hypothesis.

Research Question 3 was the following: Is there a relationship between the timing of debriefings and the perceptions of teamwork in emergency department nurses? The related null hypothesis was the following: There is no relationship between the timing of debriefings and perceptions of teamwork in emergency department nurses. Table 4 displays the total NTS score based on the timing of the debriefing. Results indicated significant differences in the NTS total score based on the timing of the debriefing ($\eta = .36$, $p = .03$). Scheffe post hoc tests indicated the NTS total score to be significantly higher during a hot (immediately after) debrief ($M = 3.85$) than during situations in which no debriefing occurs ($M = 3.28$). This combination of findings provided support to reject the null hypothesis.

Additional Findings

Table 5 displays the Spearman correlations for education, gender, and age with each of the six NTS scores. For the resulting 18 correlations, three were significant at the $p < .05$ level. Younger nurses had higher scores for trust ($r_s = -.29$, $p < .05$), shared mental models ($r_s = -.26$, $p < .05$), and team leadership ($r_s = -.24$, $p < .05$).

Table 5

*Spearman Correlations for Education, Gender, and Age With NTS Scores (*N = 68*)*

NTS Score	Education	Gender [a]	Age	
Total score	.01	.10	-.18	
Trust score	.01	.01	-.29	*
Team orientation score	.02	.02	.07	
Backup score	-.03	.15	-.12	
Shared mental model score	.01	.14	-.26	*
Team leadership score	.04	.12	-.24	*

Note. * $p < .05$. [a] Gender: 1 = *Female* 2 = *Male*.

Table 6 displays the Spearman correlations for experience and type of emergency department with each of the six NTS scores. For the resulting 12 correlations, two were significant at the $p < .05$ level. Non combined emergency department nurses had higher scores for trust ($r_s = -.29$, $p < .05$) and for team leadership ($r_s = -.25$, $p < .05$).

Table 6

*Spearman Correlations for Experience and Type of ED with NTS Scores (*N = 68*)*

NTS score	ED experience	Type [a]	
Total score	-.10	-.22	
Trust score	-.19	-.29	*
Team orientation score	.04	-.02	
Backup score	-.04	-.20	
Shared mental model score	-.17	-.18	
Team leadership score	-.14	-.25	*

Note. * $p < .05$. [a] Emergency Department (ED): 0 = Separate 1 = Combined pediatric and adult patients.

Table 7 displays the Spearman correlations for each of the three debriefing variables with each of the six NTS scores. For the resulting 18 correlations, all but three correlations were significant at the $p < .05$ level. The NTS team orientation score was not significantly related to any of the three debriefing scores. Among the 15 significant correlations, the strongest correlations were for the trust score with the formality of the debriefing ($r_s = .41$, $p < .001$) and for the timing of the debriefing ($r_s = .41$, $p < .001$). Another of the largest correlations was between the team leadership score and the frequency of debriefing score ($r_s = .40$, $p < .001$).

Table 7

*Spearman Correlations for Debriefing Variables With NTS Scores (*N = 68)

	Debriefing variables					
NTS Score	Formality		Frequency		Timing	
Total score	.34	***	.36	***	.33	**
Trust score	.41	****	.37	***	.41	****
Team orientation score	.17		.21		.12	
Backup score	.30	**	.27	*	.35	***
Shared mental model score	.30	**	.33	**	.29	*
Team leadership score	.33	**	.40	****	.33	**

*Note. * p < .05. ** p < .01. *** p < .005. **** p < .001.*

Summary

I used data from 68 nurses to determine whether there was a relationship between postresuscitation debriefings and perceptions of teamwork in emergency department nurses. Hypothesis 1 (frequency of debriefing and trust) was supported (see Table 4). Hypothesis 2 (type of debriefing and trust) was supported (see Table 4). Hypothesis 3 (timing of debriefing and trust) was supported (see Table 4). In Chapter 5, I interpret the findings in the context of related literature and present conclusions, implications, and recommendations.

Chapter 5: Discussion, Conclusions, and Recommendations

This chapter begins with a discussion and comparison of major findings as related to the literature on debriefings, teamwork, and nursing. Also included in this chapter is a discussion of connections to the theoretical framework of the nurse as wounded healer. The chapter concludes with a discussion of the limitations of the study, areas for future research, implications for social change, and a brief summary.

The purpose of this quantitative study was to determine whether there was a relationship between postresuscitation debriefings and perceptions of teamwork in emergency department nurses. I sought to answer three research questions:

RQ1: Is there a relationship between the frequency of postresuscitation debriefings and perceptions of teamwork in emergency department nurses?

RQ2: Is there a relationship between the type of debriefing conducted and the perceptions of teamwork in emergency department nurses?

RQ3: Is there a relationship between the timing of postresuscitation debriefings and perceptions of teamwork in emergency department nurses?

I used a survey method to collect data on debriefing and perceptions of teamwork in emergency department nurses. That data were analyzed using a correlation coefficient to determine whether there was a relationship between the two variables. There were initially 78 survey responses; however, six surveys were excluded for missing more than one response, and four were removed as univariate outliers, which resulted in a total sample of 68. This study contributed to the gap in the literature on debriefings and teamwork.

Key findings from this study indicated that trust, team orientation, backup, shared mental model, and leadership were higher when debriefings were formal, higher frequency, and immediately after the event had occurred. Results for all three research questions supported their alternative hypotheses and disputed their null hypotheses. There was a significant correlation between formal process and NTS total score, $r = .341$, $p = .004$; trust score, $r = .383$, $p = .001$; backup score, $r = .299$, $p = .013$; shared mental model, $r = .319$, $p = .008$; and team leadership, $r = .324$, $p = .007$. There was a significant correlation between debriefing frequency and NTS total score, $r = .388$, $p = .001$; trust score, $r = .382$, $p = .001$; team orientation, $r = .260$, $p = .032$, backup score, $r = .285$, $p = .018$; shared mental model, $r = .371$, $p = .002$; and team leadership, $r = .408$, $p = .001$. There was a significant correlation between timing and NTS total score, $r = .310$, $p = .010$; trust score, $r = .358$, $p = .003$; backup score, $r = .321$, $p = .008$; shared mental model, $r = .312$, $p = .010$; and team leadership, $r = .338$, $p = .006$.

Interpretation of the Findings

The intent of this study was to explore the relationship between postresuscitation debriefings and perceptions of teamwork in emergency department nurses. In this section, the findings of this study are compared to what had been found in the peer-reviewed literature reviewed in Chapter 2. I focus on the ways in which the findings confirm, disconfirm, or extend knowledge in nursing. Furthermore, the findings are analyzed and interpreted in the context of the nurse as wounded healer theory.

Pearsons correlation coefficients were used to answer three research questions addressing the relationship between postresuscitation debriefings and perceptions of

teamwork. The results presented in Chapter 4 indicated a positive correlation between debriefings and multiple metrics of teamwork. Increased frequency of debriefings was related to increased trust, team orientation, team backup, shared mental model, and leadership. Formal debriefings and immediate (hot) debriefings were related to increased trust, team backup, shared mental model, and leadership. The results of this study were consistent with those from other studies previously conducted and discussed, and will be compared to each research question.

Research Question 1

Research question 1 focused on the frequency with which debriefings occur, from never to always. This measure had a positive correlation across all six measures of the NTS: total score, trust, team orientation, backup, shared mental model, and leadership. These results were similar to those found in previous studies. Health care students reported that post simulation debriefing allowed them to be more prepared to work in an interdisciplinary team (Andersen et al., 2018). With regard to team orientation, results were similar to how debriefings were shown to have improved cooperation, communication, and situational awareness (Mullan et al., 2012). Similarly, reviews of trauma resuscitations without debriefings showed a disconnect in perceptions of responsibility and teamwork (Steinemann et al., 2017).

Research Question 2

Research question 2 focused on the type of debriefings, from never to formal scripted. This measure had a positive correlation across five of the six measures of the NTS: total score, trust, backup, shared mental model, and leadership. This finding was

similar to previous research that showed that standardizing the method of conducting debriefings helps aid clinical teams in their performance (Arciaga, Whalen, Brewer, & Hammer, 2019). Similarly, structured debriefings have been shown to help identify areas for improvement in communication and situational awareness (Kessler et al., 2015; Lacerenza, Marlow, Tannenbaum, & Salas, 2018).

Research Question 3

Research question 3 focused on the timing of debriefings, from cold (delayed) to hot (immediately). This measure had a positive correlation across five of the six measures of the NTS: total score, trust, backup, shared mental model, and leadership. Results indicated that these subtopics of the NTS are higher when debriefings are hot. This finding was similar to the initial development of critical incident stress debriefing, which indicated that the longer the time between the event and the debriefing, the less effective the debriefing will be on participants (Mitchell, 1988). Hot debriefings have also shown to have advantages of minimizing recall bias (Kessler et al., 2015). Disadvantages to hot and warm debriefings include limited time and available physical space as well as the emotional willingness of members to debrief (Kessler et al., 2015).

Theoretical Framework

The theoretical basis for this study was Conti-O'Hare's (2002) nurse as wounded healer theory. In this theory the nurse experiences a traumatic event that makes her or him a walking wounded. The nurse is traumatized, which affects both personal and professional coping. The nurse perpetuates the cycle of being a walking wounded through job dissatisfaction and a negative work environment until something breaks the cycle.

Walking wounded nurses may appear irritated, impatient, or exhibit aggressive, which separates them from their professional team (Geoffrion, Morsely, & Guay, 2016; Maloney, 2012). Through a therapeutic process, the nurse can become a wounded healer and take care of others in the future, thereby having a positive impact on the health care system. Findings from the study suggested that the debriefing process can be the therapeutic process to aid nurses in becoming wounded healers. Debriefings offered to distraught health care members provide support and an opportunity to make meaning of traumatic events (Maloney, 2012).

In the nurse as wounded healer theory, Conti-O'Hare (2002) recognized that for nurses to be able to effectively manage patients, they must have shared trauma and recovery experiences. In the current study, the shared trauma was the resuscitation, and the recovery experience was the debriefing. Conti-O'Hare used the Q.U.E.S.T. Model to assist nurses in coping with critical situations. The Q.U.E.S.T. model has nurses evaluate themselves to determine where they are in terms of dealing with an incident by evaluating six areas: question, uncover, experience, search for meaning, transform, and transcend (Conti-O'Hare, 2002). Through the process of debriefing, the nurse and other health care members go through their Q.U.E.S.T. to discuss the actions and thought processes involved in the situation (Q.U.E.), encourage reflection (S), and incorporate improvements into future performance (T).

Limitations of the Study

The results of this study are not generalizable to the general nursing population. The study was conducted with solely emergency department nurses and findings are not

generalizable to nurses who practice in other disciplines. Generalizability can also not be

extended to other members of the health care team. This study focused on nurses'

perceptions of teamwork, yet managing a critical patient requires the coordination of

physicians, technicians, pastoral care, and other ancillary staff. The perceptions of other

members of the health care team may differ from those of the nurses.

The Emergency Nurses Association has approximately 40,000 members, but the

study sample included only a small percentage of the organization. Although participants

were not excluded due to any race, creed, or culture, that demographic information was

not collected. Future studies may address additional demographics to determine whether

perceptions vary based on culture or other demographic variables.

Historically, surveys have a low response rate and at times are not fully completed

by all participants, particularly with health care professionals (Funkhouser et al., 2017).

This phenomenon was observed in the current study as the response rate was 15.6%. The

low response rate may have indicated a self-selection bias. Participants who were more

involved in situations that either did or did not involve debriefings may have had more

drive to respond. In addition, the survey was mailed during the month of July, where

some potential participants could have been on vacation or were otherwise not receiving

mail.

Recommendations

The environment of the emergency department is often chaotic, energetic,

emotional, and tumultuous. The bustling environment does not offer nurses much

opportunity to take a breath, let alone to mentally sort through critical situations for

coping and moving forward. During acute situations, emergency department nurses are expected to move on and care for the next critical patient. This scenario thoroughly highlights why the emergency department must rely on teamwork. Teamwork among emergency department health care providers affords them the opportunity to support one another, sort through why decisions were made, and work together to move on to care for the next influx of critical patients.

Findings from the current study indicated a relationship between debriefings and perceptions of teamwork in emergency department nurses; however, there remains a lack of knowledge in certain areas. This study focused solely on the perceptions of emergency department nurses. The perceptions of additional members of the emergency department health care team, including nurses from other departments, should be addressed in future studies to provide a broader understanding of the relationship.

Also, findings from the current study did not indicate whether nurses have improved teamwork due to more frequent debriefings or whether debriefings occur more frequently because of strong teamwork. Future studies may include teamwork surveys before and after implementation of debriefings to determine whether a change in team scores is found. Future studies may also include qualitative interviews to develop a better understanding of the debriefing phenomenon. In addition, future studies should investigate who initiates debriefings to determine if that affects frequency and teamwork.

Implications

Nurses have been referred to as the heart of health care, always giving parts of themselves to care for others during the most demanding and stressful times. Nurses

dedicate their lives to the care of patients and families, regardless of their own emotional and physical anguish. Nurses who are faced with situational distress in their work environment without receiving support are not able to easily process the experience (Eslami, Elahi, Mohammadi, & Fallahi, 2017). Emotionally and physically draining situations are daily occurrences for nurses, and they may go unsupported and unacknowledged. Nurses are part of the healthcare team and must work together seamlessly and tirelessly in high-stress situations to perform life-saving measures on critical patients. Building a resilient team has been shown to allow nurses to withstand the challenging demands of the emergency department (Grover et al., 2017). The ability to perform as a member of a health care team is necessary for the provision of competent clinical care (Thistlethwaite & Dallest, 2014). The goal of this study was to promote social change by providing methods for nurses to debrief, where they can emotionally process traumatic events and build a team in which members support one another to be able to move forward together.

Methodological, Theoretical, and Empirical Implications

There are approximately 90,000 emergency nurses in the United States (Nurse Source, 2018), which constitutes a large percentage of health care workers. Emergency department nurses are more susceptible to turnover because they have an increased potential for burnout and compassion fatigue (Emergency Nurses Association, 2017). The national nurse turnover rate is currently 16.8%, and emergency department nurses have exceeded the national average the past 2 years at 19.1% in 2016 and 20.2% in 2017 (NSI Nursing Solutions, 2018). Studies have shown that perceptions of teamwork can offset

the stress and demands in emergency department nurses (Johnston et al., 2016). If nurses have improved teamwork from debriefings, they may have less turnover and burnout.

Improved teamwork has been linked to several measures of positive patient perceptions and outcomes. Debriefings in health care have been shown to reduce events that endanger patient safety, such as falls (Reiter-Palmon et al., 2015). Findings from the current study may be used to increase utilization of debriefings and to improve teamwork and subsequently improved patient care.

Practice Recommendations

As teamwork is such an integral component of emergency department medicine and patient care, studies such as this which investigate teamwork are essential to helping to optimize its incorporation into the regular work. Given what we know and what I have found, I would recommend to the American Nurses Association that debriefings be conducted for all postresuscitation situations. At the hospital level, I would recommend that nursing educators and leadership should also implement debriefings as part of best practice for patient care, self-care and teamwork.

By providing the outcome of this study to emergency departments, staff can implement debriefing tools into their postresuscitation and critical incident situations. This can change the dynamic in emergency departments, by opening up communication in team members and improve teamwork amongst the healthcare members. This is an essential component of patient care as studies have shown numerous replications of the connections between quality of teamwork and both patient and healthcare provider outcomes (Rosen, et al., 2018).

Conclusion

Teamwork is an essential component of the management of patients in the emergency department. Busy, tired, and drained nurses must move from one critical patient to the next while working in a multi-disciplinary team to achieve optimal patient care. Debriefings are the process of discussing the actions and thought processes involved in a situation, encourage reflection on those actions, and incorporate improvements into future performance. In this study I sought to further investigate debriefings in the emergency department.

Existing literature has focused on debriefings as a method for the individual person to self-reflect and focus on psychological symptoms, but has failed to specifically research its relationship with teamwork. Therefore, the purpose of this study was to determine if there was a relationship between debriefings and perceptions of teamwork in emergency department nurses. Research questions and their hypotheses sought to determine aspects of debriefings and their relationship with components of teamwork. This study was founded on the nurse as wounded healer theory to understand how debriefings can affect the professional environment.

In this study I utilized a quantitative design via survey as its method. Participants were recruited via mailing list by the Emergency Nurses Association. There were 500 mailed surveys distributed to ENA members, with a 15.6% response rate (N=78). Data were collected using the Nursing Teamwork Survey, shown to be valid and reliable yielding a scaled response useful in providing statistical inferences.

A correlational analysis was conducted on the results of the surveys. Key findings from this study indicate trust, team orientation, backup, shared mental model and leadership are higher when debriefings are of formal format, higher frequency and immediately after the event has occurred. All three research questions supported their hypotheses and disputed their null hypotheses.

Results of this study are consistent with those of previous literature and of those discussed in chapter 2. Despite what I learned, there are several limitations to this study, particularly with generalizability to the remainder of the emergency department providers and other nurses. Future studies should further investigate why the relationship between the two variables exists. This study has the ability to affect social change by providing practice recommendations in emergency departments that can facilitate teamwork and potentially improve burnout and retention rates.

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Appendix A: Emergency Department Nurse Debriefing Survey

<u>Demographics</u>:

1. Which state do you currently work?_____

2. Highest education level:
    _____ Associate degree graduate
    _____ Bachelor's degree graduate
    _____ Graduate degree

3. Gender**: _____ Female   _____ Male

4. Age**:
    _____ Under 25 years old (<25)
    _____ 25 to 34 years old (25-34)
    _____ 35 to 44 years old (35-44)
    _____ 45 to 54 years old (45-54)
    _____ 55 to 64 years old (55-64)
    _____ Over 65 years old (65+)

5. Experience as an emergency department nurse:
    _____ Up to 6 months
    _____ Greater than 6 months to 2 years
    _____ Greater than 2 years to 5 years
    _____ Greater than 5 year to 10 years
    _____ Greater than 10 years

6. The demographics of your emergency department:
    _____ Only pediatrics
    _____ Only adults
    _____ Combined adult and pediatrics

Debriefings:

1 . My department participates in debriefings:
      _____ Never
      _____ 25% of the time
      _____ 50% of the time
      _____ 75% of the time
      _____ Always

2 . The timing of debriefings we participate in are:
      _____ Hot (immediately after event occurred)
      _____ Warm (short time of duration after event)
      _____ Cold (after a significant amount of time has passed, ie. days)
      _____ We do not participate in debriefings

3 . The type of debriefings we participate in are:
      _____ Formal structured tool
      _____ Informal unstructured conversation
      _____ We do not participate in debriefings

Please fill in all the following items regarding **YOUR TEAM**. Team is defined as the group of people working together on a patient care unit (or a section of a unit such as a wing) including nurses, physicians, nursing assistants/aides/techs and unit clerks/secretaries. It does **NOT** refer to individuals who visit the unit.

ITEM	Rarely	25% of the time	50% of the time	75% of the time	Always
1) All team members understand what their responsibilities are throughout the shift.					
2) The nurses who serve as charge nurses or team leaders monitor the progress of the staff members throughout the shift.					
3) Team members frequently know when another team member needs assistance before that person asks for it.					
4) Team members communicate clearly what their expectations are of others.					
5) Team members ignore many mistakes and annoying behavior of teammates rather than discussing these with them.					
6) When changes in the workload occur during the shift (admissions, discharges, patients problems etc.), a plan is made to deal with these changes.					
7) Team members know that other members of their team follow through on their commitment.					
8) The nurses who serve as charge nurses or team leaders balance workload within the team.					
9) My team believes that to do a quality job, all of the members need to work together.					

ITEM					
10) The shift change reports contain the information needed to care for the patients.					
11) Some team members spend extra time on breaks.					

ITEM	Rarely	25% of the time	50% of the time	75% of the time	Always
12) Team members respect one another.					
13) When a team member points out to another team member an area for improvement, the response is often defensive.					
14) Team members are aware of the strengths and weaknesses of other team members they work with most often.					
15) If the staff on one shift is unable to complete their work, the staff on the on-coming shift complains about it.					
16) Staff members with strong personalities dominate the decisions of the team.					
17) Most team members tend to avoid conflict rather than dealing with it.					
18) Nursing assistants and nurses do <u>not</u> work well together as a team.					
19) The nurses who serve as charge nurses or team leaders are available and willing to assist team members throughout the shift.					

ITEM					
20) Team members notice when a member is falling behind in their work.					
21) When the workload becomes extremely heavy, team members pitch in and work together to get the work done.					
22) Feedback from team members is often judgmental rather than helpful.					
23) My team readily engages in changes in order to make improvements and new methods of practice.					
24) Team members readily share ideas and information with each other.					

ITEM	**Rarely**	**25%** of the time	**50%** of the time	**75%** of the time	**Always**
25) Team members clarify with one another what was said to be sure that what was heard is the same as the intended message.					
26) Team members are more focused on their own work than working together to achieve the total work of the team.					
27) The nurses who serve as charge nurses or team leaders give clear and relevant directions as to what needs to be done and how to do it.					
28) Within our team, members are able to keep an eye out for each					

other without falling behind in our own individual work.					
29) Team members understand the role and responsibilities of each other.					
30) Team members willingly respond to patients other than their own when other team members are busy or overloaded.					
31) Team members value, seek and give each other constructive feedback.					
32) When someone does not report to work or someone is pulled to another unit, we reallocate responsibilities fairly among the remaining team members.					
33) Team members trust each other.					

Appendix B: Permission to Use the Nursing Teamwork Survey

Thank you for your interest in the *Nursing Teamwork Survey (NTS).* You have permission to use it if you are willing to send the results (data) so that I can continue to monitor the psychometric properties of the tool. Let me know if you have questions.

Sincerely,
Bea
Beatrice J. Kalisch, RN, PhD, FAAN
Titus Distinguished Professor of Nursing
University of Michigan
School of Nursing

Appendix C: NTS Scoring

NTS Scoring: List of each subscale and the corresponding questions

Trust	Team Orientation	Backup	Shared Mental Model	Team Leadership
4	5	3	1	2
23	11	19	7	6
24	13	20	9	8
25	15	21	10	27
31	16	28	12	
32	17	30	14	
33	18		29	
	22			
	26			