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Relationships Of Moral Distress Among Interprofessional Icu Teams

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RELATIONSHIPS OF MORAL DISTRESS AMONG INTERPROFESSIONAL ICU TEAMS

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BY

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To the Dean for the School of Nursing:

I am submitting a dissertation written by Heather Vincent and entitled "Relationships of Moral Distress Among Interprofessional ICU Teams." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Nursing.

Dr. Joan Engebretson,
Committee Chair

We have read this dissertation
and recommend its acceptance:

Dr. Joan Engebretson _____

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Abstract

Relationships of Moral Distress Among Interprofessional ICU Teams

By Heather Vincent, MSN, RN, CPHRM

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Moral distress can impact all healthcare professionals regardless of their role in patient care due to the complex nature of delivering life-saving care to critically ill patients. Healthcare professionals working in Intensive Care Units (ICUs) are particularly at risk of experiencing interprofessional conflict due to the severity of patient illness, the complex nature of effective communication during ethically charged care delivery, conflicting team member goals, and the intensity of the patient's treatment. It is often the conflict-ridden nature of team dynamics in these high adrenaline environments that cause providers to feel morally compromised.

Using the moral distress model developed by Hamric, Borchers & Epstein (2012), as the theoretical framework, this descriptive, cross-sectional, correlational study using survey methodology aimed to examine the relationship between team communication, team dynamics, and moral distress among interprofessional healthcare providers working in the ICU at a single medical center hospital.

A purposeful sample of 223 healthcare professionals working in four ICUs were invited to participate in this study. Instruments included in this study were a generic demographic survey and the 21-item Moral Distress-Revised questionnaire. The sample included Registered Nurses (RNs), Advanced Practice Registered Nurses (APRNs),

physicians, respiratory therapists, social workers, dieticians and clergy working in the Medical ICU, Shock Trauma ICU, Pediatric ICU, and the Neonatal ICU.

Using One-way ANOVA, Spearman's Rank Order correlation coefficient test and Independent Sample Student's *t* test we were able to analyze the relationships and differences in mean MDS-R scores between professional groups and among demographic characteristics. Significant differences in mean moral distress ($F = 4.105$, $p = .001$) were found between professional roles. Significant differences in mean moral distress between levels of education ($F= 5.849$, $p = .001$) and years of ICU experience ($F = 3.180$, $p = .009$) was found. Mean moral distress scores were highest in respiratory therapists and RNs compared to dieticians. Although these findings could be applied to other interprofessional ICU team populations in similar academic medical center hospitals, variations in moral distress scores may be found. Additional studies with a more diverse professional population and a larger sample size could further examine and clarify relationships of moral distress among interprofessional ICU teams.

Keywords: Moral Distress, Communication, Interprofessional team

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Summary of Study

The focus of this descriptive, cross-sectional, correlational study was to examine the relationships of moral distress among interprofessional ICU teams in a single academic medical center hospital. An additional focus of this study was to examine the relationships of team dynamics, team communication and the development of moral distress among ICU teams.

The study was conducted as outlined in the proposal, and the aims, methods, analyses, and results reflect the content of the study proposal. There was no deviation from the proposal. The proposal outlines the specific aims, significance of the problem, proposed methods, and analyses, while the manuscript outlines the execution of the study, outlining the procedures, analyses, results, and discussion.

Proposal

Introduction

Moral distress was initially identified as a uniquely nursing-centric phenomenon wherein the nurse knows the right thing to do but cannot act upon the right course of action due to internal constraints (Jameton, 1984). Since then, the moral distress community understands that nurses are not alone in experiencing moral distress as the phenomenon has been reported in all healthcare professionals regardless of their professional role. Healthcare professionals in the Intensive Care Unit (ICU) are particularly at risk of developing moral distress in the adult and pediatric setting due to the severity of patient illness, the intensity of patient treatment, and the conflict-ridden nature of the daily interaction between patient, family and provider (Whitehead, Herbertson, Hamric, Epstein & Fisher, 2015).

The most common external factors contributing to healthcare professionals involve organizational constraints such as: a lack of collegiality, perceived hierarchical structure of the healthcare organization, and poor team communication (Hamric, Borchers, & Epstein, 2012). The impact of poor team communication can lead to professional burnout and errors in patient care, resulting in permanent patient harm or death (Whitehead et al., 2015). In the ICU setting, where the stakes are high, the ability to communicate effectively may be one of the most significant factors in a patient's outcome. When teams fail to communicate effectively, patients and healthcare professionals suffer. Patients may die as a result of failed communication and healthcare providers may suffer emotionally and professionally either leaving the profession or suffering moral distress (Epstein & Hamric, 2009; Hamric et al., 2012). As such, moral

distress is an important professional issue for interprofessional teams caring for patients in the ICU setting where complex care decisions are frequently made and carried out.

Only recently has research examined the contributing factors of moral distress among interprofessional care teams. The findings of these studies reveal that healthcare teams may experience moral distress due to intra-team dynamics and poor communication within teams (Bruce, Miller & Zimmerman, 2015). The existing research is limited in that it cannot differentiate how adult and pediatric healthcare professionals perceive team-based factors differently, based on their respective backgrounds and professional role. Further research will expand the understanding of the factors that promote moral distress among adult and pediatric ICU teams.

Specific Aims

Aim 1: Examine the level of moral distress among interprofessional healthcare providers who work in intensive care units of an academic medical center hospital.

*Aim 2**:*** Explore the differences in moral distress among interprofessional healthcare providers based on demographic characteristics (age, gender, education, years of professional experience, specialty certification, professional role, and specialty unit) and rankings of clinical scenario by healthcare profession type.

Aim 3: Examine team dynamics and team communication among interprofessional healthcare providers.

Background and Significance

While there are many sources of professional stress, moral distress is specifically associated with the ethical dimensions of healthcare related to difficulties navigating

practice while upholding professional values, responsibilities and duties (Epstein & Hamric, 2009). Initially, moral distress was thought to be exclusively experience by nurses. However, current research has shown that all healthcare professionals are susceptible to moral distress regardless of professional role or clinical setting (Hamric et al., 2012). In the ICU setting, there is evidence suggesting that poor team communication can lead to moral distress and can result in compromises in patient safety leading to negative patient outcomes (Hamric et al., 2012). Commonly, ethical conflicts within healthcare teams occur due to providers having their own sets of values and moral commitments that may conflict with other team member's value system (Fiester, 2015).

In these high stakes settings where patients are at the brink of death, ethical conflicts and failed communication occur frequently (Hamric & Blackhall, 2007). While poor communication among interprofessional teams is not new in adult and pediatric clinical settings, its contributing role in the development of moral distress has only recently been considered. This may be due to the previous narrow definition and focus of moral distress in ICU nurses or the inability to examine the perspectives of healthcare professionals across all disciplines. When interprofessional adult and pediatric healthcare teams have been studied, moral distress as a result of poor team communication has often been identified as an anecdotal factor instead of the study's main focus (Hamric et al., 2012; Ulrich, Hamric & Grady, 2010). A study examining Pediatric ICU and Neonatal ICU interprofessional healthcare teams found the second highest ranked item for all health disciplines involved witnessing poor communication that compromised care (Larson, Palmer, Gibbons, & Parshuram, 2017).

Recent studies have shown that dysfunctional team dynamics and communication issues often arise as ethical conflicts where clinicians perceive that their goals related to patient care are thwarted by a lack of agreement among team members (Edelstein, DeRenzo, Waetzig, Zelizer, & Mokwuyne, 2009). These conflicting value sets among healthcare professionals and moral commitments can lead to teams feeling morally distressed (Pavlish, Saltzman, Hersh, Shirk, & Nudelman, 2011). Disagreements among the team on how to manage patient care can lead to moral distress in nursing and other healthcare professionals (Azoulay, Timsit, & Sprung, 2009).

While ICU's routinely incorporate a team-based approach to manage patient care effectively, little research has focused on the role of moral distress and healthcare teams in the ICU. Some researchers have found that unhealthy work environments reporting poor team communication and collaboration contribute to the development of moral distress (McAndrew, Leske, & Garcia, 2011) while other studies suggest that an overall lack of team collaboration is the cause (Henrich, Dodek, Alden, Keenan, Reynolds, & Rodney 2016). A study conducted by Whitehead et al., found that the most significant predictor of developing moral distress for all professionals observed was watching patient care suffer due to lack of continuity and poor communication (2015).

Based on recent studies, it has become widely accepted that when communication within the healthcare team breaks down, ethical conflicts may remain unresolved, leaving patients at a much greater risk of a negative outcome (Henrich, Dodek, Gladstone, Alden, Keenan, Reynolds, & Rodney, 2017). A recent study of moral distress among ICU healthcare professionals found that healthcare teams experience the greatest moral distress due to intra-team conflict (Bruce et al., 2015). Similarly, a study conducted in

2013 concluded that nurses and physicians had difficulty negotiating inter-professional practice tensions including overt conflict that harmed team dynamics when intense ethical situations were actively occurring (Ewashen, 2013). In the ICU setting, Hamric & Blackhall (2007) found that teams reported higher levels of moral distress and lower satisfaction to the quality of care they provided to patient's due to poor communication among team members. The net impact of poor team communication and moral distress has been shown to influence professional burnout, create low team morale, prompt feelings of fatigue, contribute to poor patient outcomes, and result in patient care errors (Wiegand & Funk, 2012).

Clearly, there is a need to expand the focus of research on moral distress in disciplines other than nursing and approach research from an interprofessional perspective as the existing research is limited in that the sample sizes are small, with the largest cohorts being nurses and physicians. Non-direct-care professionals' perspectives, like social workers and chaplains, are not fully represented in recent studies. Additionally, the existing research is limited to only two ICU's representing professionals in academic medical centers. Considering the limitations of recent studies, it is important to see how and why there might be some generalizability of the findings. Finally, it will be essential to identify contributing factors of moral distress and better understand the range of perspectives from interprofessional team members on moral distress to inform future research and guide education, policy and practice.

Further understanding and development of the concept of moral distress among interprofessional teams is needed to underpin research on moral distress. In particular, there is a need for strong theoretical approaches that can balance individual, external, and

structural factors that shape experiences of moral distress. A better understanding of team dynamics between healthcare professionals during challenging ethical issues could mitigate the potential threats to patient safety caused by moral distress. This better understanding of moral distress could lead to a more effective intervention in the future.

Conceptual Framework

The conceptual framework of this study is based on research conducted by Hamric et al. that describes the root causes of moral distress on healthcare professionals (2012). The components of Hamric's framework include clinical situations, internal constraints, and external constraints leading to moral distress. The root causes of moral distress stemming from external constraints will be used to guide this study. The external constraint elements of interest being studied are communication among team members, collegial relationships, and differing interprofessional perspectives among team members as a factor in the development of moral distress. The conceptual framework illustrates that when team communication and team dynamics are not effective, moral distress can develop. A detailed conceptual framework based on recent moral distress literature is found in Appendix A (Hamric et al., 2012). The concept of lingering moral distress described as "moral residue" is also incorporated in the conceptual model as it may impact the experience of moral distress (Epstein & Hamric, 2009). Moral residue is said to be present when feelings of moral distress linger despite resolution of the initial triggering event (Trautman, Epstein, Rovnyak, & Snyder, 2015).

Innovation

Current research overwhelmingly represents the perspective of the nursing profession examining the nature and extent of moral distress quantitatively (Whitehead et

al., 2015). Moral distress has been identified as a complex and layered phenomena impacting the daily interaction of patient and provider (Ulrich et al., 2010). As such, the relationship of team dynamics and moral distress is an important professional issue for interprofessional teams caring for patients in all ICU settings where complex care decisions are frequently made and carried out.

This study will examine the relationship of moral distress among interprofessional ICU providers related to demographic characteristics and external factors and expand the focus of moral distress among adult and pediatric healthcare teams while moving the understanding of this complex phenomenon forward by exploring how team factors and diversity of clinical settings can impact interprofessional team moral distress. This study will examine and compare the experience of moral distress among adult and pediatric interprofessional teams from vastly different clinical experiences representing a wide spectrum of acute and chronic illness, treatment goals, and clinical situations that may represent a significant difference in reported moral distress frequency and intensity reflected by the medical, pediatric, neonatal and traumatic conditions being treated in these clinical units not fully represented in recent studies. An examination of the varying spectrums of acute and chronic adult and pediatric diseases, neonatal illness, and traumatic injuries within ICU settings will promote a more robust understanding of moral community and team dynamics within healthcare teams and will provide a clearer understanding of the collaborative dimensions of clinical practice when faced with ethically challenging clinical situations in acute and chronic patient care situations.

A better understanding of how interprofessional teams function during challenging ethical issues can help researchers develop targeted interventions that can

mitigate moral distress. In the past thirty years, little has been done to better understand moral distress from the perspective of members of interdisciplinary teams (Hamric et al., 2012). The long-term goal of this study is to expand the understanding of moral distress and its relationship to team factors to produce effective interventions among interprofessional teams in the future.

Approach

Research design and setting. A descriptive, cross-sectional, correlational design will be utilized to explore the moral distress and potential relationships between moral distress and interprofessional healthcare team demographic and clinical team characteristics among healthcare professionals working in the Shock Trauma ICU, Medical ICU, Pediatric ICU, and Neonatal ICU setting. The overall design will add to the science of interprofessional team member moral distress experiences. The approach of this study will be to determine rankings of morally distressful clinical situations between healthcare professionals caring for patients in the ICU setting utilizing the Moral Distress Survey-Revised (MDS-R) tool (Appendix B) (Hamric et al., 2012). Differences in rankings between morally distressful situations among and between healthcare professionals based on demographic characteristics and professional role and between settings will be examined.

Sample selection criteria. The sample selection criteria are as follows:

Inclusion criteria. In-patient healthcare professionals who are consistently assigned to work in the Shock Trauma ICU, Medical ICU, Pediatric ICU, and Neonatal ICU at an academic medical center hospital. The six professional groups being examined include direct care staff RNs and advanced practice registered nurses (APRNs) working

in the ICU, residents, fellows, and attending physicians admitting patients in the ICU, dieticians, social workers, respiratory therapists and clergy who are assigned to work in the Shock Trauma ICU, Medical ICU, Pediatric ICU, and Neonatal ICU.

Exclusion criteria. Supplemental staff and administrative leaders working in the Shock Trauma ICU, Medical ICU, Pediatric ICU, and Neonatal ICU will be excluded from the study.

Setting. The setting of the study will be a 900-bed academic hospital located in the Texas Medical Center. The ICU team participants will include interprofessional teams from a Shock Trauma ICU, Medical ICU, Pediatric ICU, and Neonatal ICU. The four ICU teams will be obtained by a sample of direct care staff RNs and APRNs, residents, fellows, and attending physicians, respiratory therapists, social workers, dieticians, and clergy self-reported as functioning as a cohesive interprofessional team.

Sample. A sample derived from interprofessional care providers assigned to work in the Shock Trauma ICU, Medical ICU, Pediatric ICU, and Neonatal ICU in the following roles will be recruited: staff RNs and APRNs, resident, fellow, and attending physicians, dieticians, social workers, respiratory therapists and clergy. The sample size to be utilized will be 216 with a possible enrollment number of 300 participants from four ICUs. This sample number will allow for potential incomplete survey responses based on the participant calculation requirement of 216 using G power with an effect size of 0.25, alpha 0.5, and power of 0.8 to ensure that a sufficient sample size has been reached using One-Way ANOVA.

Instruments

Demographic survey. A demographic questionnaire (Appendix C) will be provided to all interprofessional team members completing the MDS-R. Questions will include the following demographic characteristics: professional role, specialty unit, age, gender, level of education, specialty certification, and years of experience in the ICU setting.

Moral Distress Survey-Revised. Moral distress will be measured using the MDS-R tool. The MDS-R is 21-item questionnaire measuring moral distress using six parallel versions including adult and pediatric versions for nurses, physicians, and other healthcare professionals (Hamric et al., 2012). Scoring of the MDS-R is achieved by using a 5-point Likert scale with 0 representing none to 4 representing the highest frequency or intensity of the clinical situation experienced by the healthcare professional. Item scores for moral distress intensity and moral distress frequency are multiplied and summed for each of the 21-items creating a new variable for each item, the frequency x intensity (fxi) ranging from 0 to 16. Items with low fxi scores represent minimally distressing or infrequently experienced distressing situations. Items producing high levels of distress will produce higher fxi scores.

The MDS-R has a unique scoring scheme, designed to give a measure of moral distress. Conceptually, items that have never been experienced or are not seen as distressing do not contribute to an individual's level of moral distress. The composite moral distress score is calculated by summing each items fxi score. The resulting total score for the 21-items range from 0 to 336. Two additional dichotomous questions will be posed at the bottom of each MDS-R survey. These two questions assessed the intent

of the healthcare professional to leave a position now or in the past. This study will utilize the adult and pediatric surveys to explore moral distress among interprofessional teams. Permission to use this survey has been obtained from the developer. Two addition questions have been added to the MDS-R to determine the role of team dynamics and poor communication in the development of moral distress. The questions ask, "Team dynamics has affected my level of moral distress" and "Team communication has affected my level of moral distress". These questions will be answered on a scale of Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree.

Recent evidence of reliability includes Cronbach's alpha of .89 (nurses) and .88 (other healthcare professionals) suggesting adequate internal consistency [(Hamric et al., 2012)]. However, when the study was repeated with a larger physician sample (N=156), the Cronbach's alpha was .88. Reported construct validity estimate for the MDS-R was evaluated using hypothesis testing. The study concluded that nursing and physician-based hypotheses were supported (r =.22, p = .005). The MDS-R tool has been tested for content validity and has been used in multiple moral distress studies to analyze nurses, physicians, and other healthcare professional's responses to moral distress intensity and frequency. The MDS-R 21-item questionnaire is well established and scientifically accepted as a reliable tool to measure moral distress in ICU professionals (Hamric et al., 2012). Results produced by the MDS-R reliably produce mean moral distress scores that can address the research questions in this study.

Data Collection

The PI will do all recruitment and enrollment for the study by presenting information about the research at the Trauma, Medicine, Pediatric, and Neonatal Grand

Rounds, monthly service line meetings, and monthly ICU unit meetings. Participants will be provided a research study information sheet prior to beginning the study. Submission of demographic and MDS-R surveys will signify consent to participate in the study.

All survey submissions will remain anonymous. Survey forms will be located on each unit in color coded folders to ensure participants take the right one based on their professional role. The PI will also provide a locked drop box on each unit for participants to place their completed surveys. The PI will collect completed surveys from the locked boxes daily. Data collection will be conducted over one month. Non-responders will not be further recruited. RNs and APRNs will receive the Nursing MDS-R, residents, fellows and attending physicians will receive the physician MDS-R, and social workers, respiratory therapists, dieticians, and clergy will receive the other healthcare professional MDS-R. A generic demographic survey and information sheet will be attached to all MDS-R surveys.

Participants will be advised that the survey may take 15-20 minutes to complete and can be taken only once. Once the study has begun, participants will be instructed to complete the questionnaire and return it to a designated locked drop box placed in the Shock Trauma ICU, Medicine ICU, Pediatrics ICU, or Neonatal ICU. The primary researcher will retrieve the completed surveys daily while the study remains open.

As eligible participants submit the demographic and MDS-R survey, their results will be collected and imported into a secure computer excel spread sheet managed by the researcher. Participants will be advised that all individual responses and identity will

remain confidential. Survey responses will not be shared with department supervisors or be used in any performance evaluations.

Data Analysis

To evaluate the stated aims of the study, the following analysis will be conducted. All data will be analyzed using the SPSS software (IBM SPSS Statistics, Version 25, 2017). Descriptive statistics will be used to describe the sample.

Aim 1: Examine the level of moral distress among interprofessional healthcare providers who work in intensive care units of an academic medical center hospital.

Descriptive statistics will be used to measure moral distress among healthcare professionals. Intensity, frequency, and composite moral distress scores will be calculated by discipline and reported in mean range using the MDS-R.

Aim 2: Explore the differences in moral distress among interprofessional healthcare providers based on demographic characteristics including age, gender, education, years of professional experience, specialty certification, professional role, and specialty unit.

Spearman's Rank Order correlation coefficient test will be used to compare the relationship of moral distress and demographic characteristics (age, gender, education, years of professional experience, specialty certification), professional role, and specialty unit. The Dependent Variable (DV) will be the moral distress scores of the participant. The Independent Variable (IV) will be demographic characteristics reflecting the healthcare professional. The sample size for this aim is calculated by using Spearman correlation for t tests, two-tailed significance for a medium effect size of .30, with alpha of .05, and a power of .80. The total sample size needed is 82 participants.

A one-way Analysis of Variance (ANOVA) with moral distress as the DV and demographic characteristics (age, gender, education, years of professional experience, specialty certification, professional role, specialty unit), rankings of clinical scenarios by professional type, and differences among disciplines and clinical units as the IV. The sample size for this aim is calculated by using One-way ANOVA for F tests, medium effect size of .25, with alpha of .05, and a power of .80 with a number of six groups. The total sample size needed is 216 participants.

Aim 3: Examine team dynamics and team communication among interprofessional healthcare providers. Spearman's Rank Order correlation coefficient test will be used to analyze the strength of the relationship between mean MDS-R scores and participant responses to team dynamics and team communication affecting their level of moral distress by examining the percentage of respondent's answers to the specific questions.

Interpretation

The findings that emerge from the MDS-R will be used to gain additional insight into the unique perspectives of the healthcare professionals to fully understand the relationship of external team factors and moral distress among interprofessional team members caring for patients in four ICU settings.

In the future, approaching clinical teams as "moral communities" might encourage the norm to be one of mutual respect and mutual understanding, while highlighting virtues that can counteract hierarchical dynamics, and encourage a more inclusive and mutually respectful collaborative processes (Lusignani, Gianni, Re, &

Buffon, 2017). The establishment of team collaboration might encourage clinicians to think in terms of the moral wellness and health of the shared clinical environment. A greater understanding of the role of team dynamics might encourage participants to engage in their work together in ways that seek to preserve the integrity of individual team members as well as the integrity and moral wellness of the interprofessional team.

Limitations. The use of structured self-report questionnaires is vulnerable to reporting and response biases. Response set biases may be encountered independently of item content. Sampling bias may limit generalizability as a consequence of including study participants from specialty ICU settings in a single hospital. There is a potential for social desirability response bias on questionnaire items. A potential sampling bias of study participants could occur due to an overly homogenous population from a single hospital in Houston, Texas. The lack of control over the potential exchange of survey questions and responses between ICU staff could cause results that are overly similar to other professionals involved in the study.

Human Subjects

Approval to conduct the study will be obtained from the Institutional Review Board (IRB) of The University of Texas Health Science Center at Houston. Human subjects' procedures include the recruitment of study participants, the eligibility screening process, and completion of study questionnaires. Participants will be provided with information on the voluntary nature of their participation, risks, confidentiality of responses and the aggregate reporting of study findings to the individual professional departments.

Participation in this study represents a low risk to participants through survey response sharing. To maintain participant privacy, surveys will not be tracked, and the responses will be reported in publication. Survey responses will be securely maintained on an Excel spreadsheet. To limit a breach in confidentiality, all responses will be managed by the primary researcher using a secure database and computer. To ensure private survey responses, participants will be advised to complete the questionnaires in a private environment free from distraction. IRB approval will be obtained prior to any communication with the participants of the study. Participant's rights, confidentiality, and anonymity will be upheld by the researcher. Subjects who meet the inclusion criteria and are willing to participate in the study, will be enrolled. Study participants will derive no direct benefits from participating in the study. The composition of the study will be limited by professional role to clearly understand the aims of the study. The population will not be restricted based on age, gender, or level of education.

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Manuscript

Relationships of Moral Distress Among Interprofessional ICU Teams.

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Introduction

As early as 1984, the phenomenon of moral distress was seen as a conflict of knowing the right thing to do but being unable to do it due to institutional constraints that made it impossible to pursue the "right" course of action based on an individual's moral belief (Jameton, 1984). This conflict created pain and anguished and resulted in the identification of three components most frequently seen in morally distressful situations. The first component is recognizing that there is an ethical problem. The second, is a realization that the healthcare provider has an obligation to do something to correct the ethical problem. The third component of moral distress is the consideration of what actions to perform to correct the ethical dilemma. It is this complex and layered environment that makes moral distress an important professional issue.

Jameton's definition of moral distress is still seen as the foundation in which alternate theories are compared. The term has been refined multiple times since 1984, to include psychological, political, and behavioral aspects that may contribute to the prevailing phenomena.

Background

As healthcare becomes more and more complex and resources are stretched beyond the limits, healthcare teams are at risk for experiencing situations where they are caring for patients with life-limiting conditions that are at odds with their moral beliefs. These interprofessional teams witness patient suffering as they provide intensive interventions aimed at saving or improving quality of life, relieving pain, and supporting the patient to a dignified death. When healthcare provider's moral beliefs are at odds with the care being provided to their patients, they are at risk for developing moral distress. If the feelings of moral distress remain unresolved, the effects may contribute to depression, impact spirituality, and adversely impact patient safety.

Moral distress was initially identified as a uniquely nursing-centric phenomenon wherein the nurse knows the right action but cannot act upon the right course of action due to internal constraints (Jameton,1984). While there are many sources of professional stress, moral distress is specifically associated with the ethical dimensions of healthcare related to difficulties navigating practice while upholding professional values, responsibilities and duties (Epstein & Hamric, 2009). Initially, moral distress was thought to be exclusively experienced by nurses. However, current research has shown that all healthcare professionals are susceptible to moral distress regardless of professional role or clinical setting (Hamric, Borchers, & Epstein, 2012). Healthcare professionals in Intensive Care Units (ICUs) are particularly at risk of developing moral distress in the adult and pediatric setting due to the severity of patient illness, the intensity of patient treatment, and the nature of the daily interaction between patient, family, and provider (Whitehead, Herbertson, Hamric, Epstein, & Fisher, 2015).

The most common external factors contributing to healthcare professionals' moral distress involves organizational constraints such as: a lack of collegiality, perceived hierarchical structure of the healthcare organization, and poor team communication (Hamric et al., 2012).

The impact of poor team communication can lead to professional burnout and errors in patient care, resulting in permanent patient harm or death (Whitehead et al., 2015). In ICU settings, where the stakes are high, the ability to communicate effectively may be one of the most significant factors in a patient's outcome. When teams fail to communicate effectively, patients and healthcare professionals suffer. Patients may die as a result of failed communication and healthcare providers may suffer emotionally and professionally either leaving the profession or suffering moral distress (Epstein & Hamric, 2009; Hamric et al., 2012). As such, moral distress is an important professional issue for members of interprofessional teams caring for patients in ICU settings where complex care decisions are frequently made and carried out.

Significance

Moral distress has been identified as a complex phenomenon impacting the interactions of patients and providers (Ulrich, Hamric & Grady, 2010). As such, the relationship of team dynamics, team communication, and moral distress is an important professional issue for interprofessional teams caring for patients in all ICU settings where complex care decisions are frequently made and carried out. In ICU settings, there is evidence suggesting that poor team communication can lead to moral distress and can result in compromises in patient safety leading to adverse patient outcomes (Hamric et al., 2012).

Commonly, ethical conflicts within healthcare teams occur due to providers having their own sets of values and moral commitments that may conflict with another team member's value system (Fiester, 2015). In these high stakes settings where patients are at the brink of death, ethical conflicts and failed communication occur frequently (Hamric & Blackhall, 2007). While poor communication among interprofessional teams is not new in adult and pediatric clinical settings, its contributing role in the development of moral distress has only recently been considered. This may be due to the previous narrow definition and focus of moral distress in ICU nurses or the inability to examine the perspectives of healthcare professionals across all disciplines. When interprofessional adult and pediatric healthcare teams have been studied, moral distress because of poor team communication has been identified as an anecdotal factor instead of the study's focus (Hamric et al., 2012; Ulrich, et al., 2010). Recent research has begun to examine the contributing factors of moral distress among interprofessional care teams. The findings of these studies reveal that healthcare teams may experience moral distress due to intra-team dynamics and poor communication within teams (Bruce, Miller & Zimmermann, 2015). The existing research is limited in that it could not differentiate how adult and pediatric healthcare professionals perceive team-based factors differently, based on their respective backgrounds and professional role.

This study purposefully expands on the 21-item clinical situations presented in the MDS-R to explore the relationship that team dynamics and team communication have on the development of moral distress among interprofessional healthcare professionals. It is only though this deliberate questioning that targeted interventions can be implemented to address the role of team dynamics in the development of moral distress.

Conceptual Framework

The conceptual framework of this study is based on research conducted by Hamric et al (2012) that describes the root causes of moral distress in healthcare professionals. The components of Hamric's framework include clinical situations, internal constraints, and external constraints leading to moral distress (Hamric et al., 2012). The conceptual framework illustrates that when team communication and team dynamics are not effective, moral distress can develop. A detailed conceptual framework based on recent moral distress literature is found in Appendix A.

Aims

The aims of this descriptive, cross-sectional study were: (1) to examine the level of moral distress among interprofessional healthcare providers who work in four intensive care units of a single academic medical center hospital as measured by the moral distress scale-revised (MDS-R); (2) explore the differences in moral distress among interprofessional healthcare providers based on demographic characteristics (age, gender, education, years of professional experience, specialty certification, professional role, and specialty unit) and rankings of clinical situations by professional role; (3) examine team dynamics and team communication among interprofessional healthcare providers.

Methods

A descriptive, cross-sectional, correlational study using survey methodology with the 21-item MDS-R was performed. The study was approved by the University of Texas Health Institute Review Board and the Memorial Hermann Health System. Participants were recruited from four ICUs between November and December 2017. Potential

relationships between moral distress and interprofessional healthcare team demographics, team communication, team dynamics, and clinical situations were analyzed by examining the mean moral distress score for each of the 21-items on the MDS-R survey. The invitation to participate in this study was offered to all Registered Nurses (RNs), advanced practice registered nurses (APRNs), physicians, social workers, dieticians, clergy, and respiratory therapists working in the Medical ICU (MICU), Shock Trauma ICU (STICU), Pediatric ICU (PICU), and Neonatal ICU (NICU). Recruitment methods are explained in the Procedures section below. The interprofessional participants from the four ICUs were obtained by a sample of direct care staff RNs and APRNs, residents, fellows, and attending physicians, respiratory therapists, social workers, dieticians, and clergy functioning as a cohesive interprofessional team.

Inclusion criteria. The inclusion criterion for participation in the study was full or part-time employment as an in-patient healthcare professional consistently assigned to work in STICU, MICU, PICU, and NICU. The professional groups examined were direct care staff RNs and APRNs working in the ICU, residents, fellows, and attending physicians admitting patients in the ICU, dieticians, social workers, respiratory therapists and clergy who were assigned to work in the MICU, STICU, PICU, NICU.

Exclusion criteria. The study excluded supplemental staff and administrative leaders working in these units. The sample size for Aim 2 was calculated using Spearman's Rank Order correlation coefficient test, two-tailed significance for a medium effect size of 0.30, with alpha of 0.05, and a power of 0.80. The total sample size needed was 82 participants. The sample size for One-way ANOVA for *F* tests, medium effect

size of 0.25, with alpha of 0.05, and a power of 0.80 with six groups. The total sample size needed for the One-way ANOVA was 216 participants.

Prior to beginning the survey, participants were provided an IRB approved information sheet explaining the purpose of the research, voluntary nature of participation, and measures taken to ensure respondent confidentiality. All eligible participants were provided paper MDS-R questionnaires based on professional role and ICU setting. A generic demographic questionnaire including professional role, unit, age, and gender, level of education, specialty certification, and years of experience in any ICU setting was also provided to all participants. The developer of the MDS-R granted permission to the researcher to use all six versions of the instrument to measure moral distress in healthcare providers in adult and pediatric ICU settings among RNs, physicians, and other healthcare providers.

Procedures

All eligible physicians were recruited by in-person presentations at Medical, Shock Trauma, Pediatric, and Neonatal ICU monthly service line meetings. Eligible RNs and APRNs, social workers, respiratory therapists, and clergy were recruited by in-person presentations before morning and evening shift reports and during monthly unit meetings.

Paper MDS-R surveys were handed out to participants based on their professional role and ICU setting during recruitment. Additionally, to increase enrollment, folders were labeled as RN, physician, or other healthcare provider were located on each unit to ensure that participants had additional copies of the surveys in the event that the original survey that was handed out was lost or misplaced. RNs and APRNs completed the

registered nurse survey, residents, attendings and fellows completed the physician survey, and dieticians, clergy, respiratory therapists and social workers completed the other healthcare provider survey according to setting. Participants were advised that the survey could only be taken once. Participants were instructed to submit completed surveys in the designated locked drop box placed near the nurse's station in the ICU. Drop boxes were equipped with a cut out slot designed to accommodate the size of a folded in half survey. Completed surveys were collected from the locked boxes on the unit daily.

Healthcare professionals provided their consent for the project by completing the MDS-R and demographic survey. The PI rounded on the units twice a day and collected the surveys from the locked drop boxes. As eligible participants submitted the demographic and MDS-R survey, their results were collected and imported into a secure computer excel spread sheet and then transferred into an SPSS software (IBM SPSS Statistics, Version 25, 2017) managed by the researcher.

Instruments

MDS-R

Hamric et al. (2012), revised the original 38-item MDS, creating the MDS-R. The MDS-R is 21-item questionnaire measuring moral distress using six parallel versions including adult and pediatric versions for RNs, physicians, and other healthcare professionals (Hamric et al., 2012). Scoring of the MDS-R is achieved by using a 5-point Likert scale with frequency identified as 0 representing *none* to 4 representing *very frequently* and intensity identified as 0 representing *none* and 4 representing *greater extent* to the clinical situation experienced by the healthcare professional.

There are six versions of the MDS-R to measure moral distress in adult and pediatric ICUs among RNs, physicians, and other healthcare providers. The instrument has a unique scoring scheme, designed to give a measure of moral distress. Conceptually, items that have never been experienced or are not seen as distressing do not contribute to an individual's level of moral distress. Item scores for moral distress frequency (MDF) and moral distress Intensity (MDI) are multiplied and summed for each of the 21-items creating the frequency x intensity (fxi) variable for each item ranging from 0 to 16. Items with low fxi scores represent minimally distressing or infrequently experienced distressing clinical situations. Items producing high levels of distress produce higher fxi scores. The mean MDS-R score is calculated by adding each of the 21-item fxi scores providing a composite moral distress score ranging from 0-336.

Original reliabilities in psychometric testing of the MDS-R yielded Cronbach's alpha of 0.89 for nurses, 0.67 for physicians, and 0.88 for other healthcare professionals suggesting adequate internal consistency [(Hamric et al., 2012)]. Reported construct validity estimate for the MDS-R was evaluated using hypothesis testing. The study concluded that nursing and physician-based hypotheses were supported (r =.22, p = .005). The MDS-R tool has been tested for content validity and has been used in moral distress studies to analyze RNs, physicians, and other healthcare professional's responses to moral distress intensity and frequency (Hamric et al., 2012). The MDS-R 21-item questionnaire is well established and scientifically accepted as a reliable tool to measure moral distress in ICU professionals. Copies of the 21-item MDS-Rs are found in Appendix B.

The MDS-R contains two dichotomous questions at the bottom of survey to assess the intent of the healthcare professional to leave a position now or in the past: “Have you ever left or considered quitting a clinical position because of your moral distress with the way patient care was handled at your institution?” and “Are you considering leaving your position now?”

Two additional questions were added to the MDS-R to examine the role of team dynamics and team communication contributing to the development of moral distress in interprofessional healthcare professionals. These questions were added to the MDS-R to gain additional insight into the healthcare provider’s perspective on the extent to which team dynamics and team communication have on the development of moral distress. These questions were specifically developed by the PI to address Aim 3 of the study to better understand how team centered dynamics contribute to feelings of moral distress. The two additional questions asked, “Team dynamics has affected my level of moral distress” and “Team communication has affected my level of moral distress”. These questions were answered on a scale of Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree.

Demographic Survey

A demographic data questionnaire developed for this study was used to collect data on participants’ age, education, specialty certification (board certification for physicians), professional role, years of ICU experience, gender, unit, and employment status. Age groups were categorized as 20-27, 28-35, 36-41, 42-46, 47-53, 54-60, 61-65, and 66-70 to better understand how differences in age can affect the development of

moral distress. The highest education degree was categorized as associate degree, bachelor's degree, master's degree, and doctorate degree to adequately reflect the highest degree earned and the range of education among the professional roles. Professional roles were identified as RN, APRN, dietician, social worker, clergy, respiratory therapy, physician, fellow, and resident levels from PGY 1 to PGY 5. Years of total professional experience in any ICU were categorized as 1-5, 6-10, 11-15, 16-20, 21-25, 26-30, 31-35, and 36-40+. ICUs participating in the study were categorized as MICU, STICU, PICU, and NICU. Employment status was categorized as full-time or part-time. A copy of the demographic survey is found in Appendix C.

The original eight categories of age ranging from 20-70 years were consolidated to six categories to reflect limited participants in the 61-65 and 66-70 age ranges. As a result of the reduction in categories, two participants from the 61-65 range and one participant from the 66-70 range were incorporated to reflect the expanded age range of 54-70. The original professional role of RN and APRN was consolidated under the RN category despite differences in practice scope and responsibility as only one APRN participated in the study. The physician role responses were consolidated from eight sub-categories to one. This category was consolidated to reflect all levels of physicians instead of dividing this professional role into multiple sub-categories defined by years of professional expertise. As a result of this consolidation in physician sub-categories, twelve Fellows, eleven PGY1s, twenty-five PGY2s, eighteen PGY 3s, five PGY 4s, and one PGY5 were included into the physician category. Years of professional experience in the ICU was consolidated from eight categories reflecting 1-40+ years of experience to six categories. The three participants from the 31-35 years of experience and the two

participants from the 36-40+ years of experience were condensed into a category reflecting 26-40+ years of experience.

Statistical Analysis

The aims of the study were analyzed using the SPSS software (IBM SPSS Statistics, Version 25, 2017). The data was examined for normality using skewness and kurtosis. Skewness or kurtosis less than 2 was established as representing a normal distribution. Statistical significance was established at the 0.05 level (Nunnally & Bernstein,1994). Moral distress scores were normally distributed.

We used descriptive statistics to describe the sample and to examine mean MDS-R scores among healthcare professionals (Aim 1). Mean MDS-R was calculated by professional role and reported in mean (±SD) (Table 1). Significant outliers were detected by visualization of boxplot. Three professional roles contained outliers. Two RN outliers from NICU reported mean MDS-R above 200. A respiratory therapist and a physician working in the STICU reported mean MDS-R scores nearing 300. The physician outlier identified feeling moral distress "In caring for critically ill patients and identifying personal knowledge deficiencies but being judged harshly by supervisors when asking for help". After examining the data with and without the outliers, *p* and *F* values between dieticians, RNs, and respiratory therapists remained significant and represented little difference after removal. Sensitivity analysis supported including the outliers in the analysis as the conclusions were consistent with and without their inclusion. The decision was made to include the outliers in the analysis.

The second aim was addressed using One-way ANOVA to determine the differences of mean MDS-R scores between professional roles and demographic characteristics. Differences in mean moral distress scores were examined using each question's fxi score on the MDS-R survey to determine the clinical situations causing the professional the greatest moral distress (see Table 2). Mean fxi scores for the 21-items were compared and the top five clinical situations causing the greatest level of moral distress among professional roles were identified.

Spearman's Rank Order correlation coefficient test and Independent Sample Student's *t* test were performed to analyze the relationships and differences in mean MDS-R scores between professional groups, intent to leave a position, and among demographic characteristics.

The third aim was addressed using Spearman's Rank Order correlation coefficient test to analyze the strength of the relationship between mean MDS-R scores and participant responses to team dynamics and team communication affecting their level of moral distress by examining the percentage of respondent's answers to the specific questions. Internal consistency reliability was determined using Cronbach's alpha test for the total scale and subscales. A priori criterion of alpha = 0.80 was established for satisfactory reliability (Nunnally & Bernstein,1994). Reliabilities in the psychometric testing of the MDS-R for this study yielded Cronbach's alpha reliabilities of 0.94 for RNs, 0.94 for physicians, and 0.91 for other healthcare providers.

Results

A total of 697(32% of all eligible professionals) participants were invited to participate in the study. A total of 223 (32%) individuals from the four ICU's completed and returned the MDS-R survey. The sample included 96 RNs (36 adult and 60 pediatric), 79 physicians (24 adult and 55 pediatric), 6 social workers (3 adult and 3 pediatric), 26 respiratory therapists (14 adult and 12 pediatric), 10 clergy (5 adult and 5 pediatric), and 6 dieticians (2 adult and 4 pediatric) (see Table 3). The 223 surveys contained no missing data in the 21-item survey but did contain missing data for the two dichotomous questions at the bottom of the survey to assess the intent of the healthcare professional to leave a position now or in the past.

Demographics

Descriptive statistics of participants' demographics are given in Table 3. Data are presented in terms of frequency and percentage. Almost half (48.4%) of the respondents were 28-35 years old. Representative of the professionals in the selected ICUs, the second largest responding age group was the 20-27-year-old category (20.0%). The smallest respondent age group participating in the study was the 54–70-year-old (6.3%). Representing the varied professional roles, almost half of the respondents had a bachelor's degree (40.4%) or a doctorate degree (35.4%). Thirty-nine percent of the respondents held a specialty certification.

RNs (43.0%) and physicians (35.0%) represented most of the survey participants. Reflective of a teaching hospital, over half (57.0%) of the respondents had 1-5 years of experience in the ICU setting. Respondents with 21-25 years of experience represented

the smallest percent of the sample (3.6%). Representative of the professionals in the selected ICUs, the majority of the study participants were females (71.0%) who worked full-time (92.0%). The majority (71.0%) of participants had mean MDS-R scores less than 100. Twenty-six percent of participants had mean MDS-R scores less than 200, and three percent of study participants had mean MDS-R scores over 200 (Table 1). The pediatric ICU teams represented 62.0% of the sample and the adult ICU teams represented 38.0%.

One-way Analysis of Variance

A One-way Analysis of Variance was computed to determine differences in mean MDS-R with demographic characteristics (Aim 2) (see Table 3). Significant differences in mean MDS-R ($F = 4.105$, $p = .001$) between professional roles were found (Aim 1). The results indicate a significant difference in mean MDS-R scores between levels of education ($F= 5.849$, $p = .001$) and years of ICU experience ($F = 3.180$, $p = .009$).

The two professional roles responding to clinical situations having the highest MDS-R scores were RNs and respiratory therapists. Respiratory therapists and RNs had mean MDS-R scores more than double the mean MDS-R scores of the dieticians who had the lowest scores. Differences in mean MDS-R scores were found in the ICUs. The adult ICUs had higher levels of mean MDS-R than the pediatric ICUs (Table 1).

A significant relationship between mean MDS-R scores and the level of education was demonstrated in participants at the associates degree. Participants with higher levels of education at the master's and doctorate level reported lower levels of moral distress. A significant difference in moral distress between years of ICU experience was found

between participants with 21-25 years of experience versus 1-5 and 11-15 (see Table 3). Participants with more years of ICU experience demonstrated higher levels of moral distress.

Mean MDS-R Scores

We examined the mean MDS-R scores to determine the top clinical situations causing the greatest level of moral distress among professional roles (Aim 2) (Table 2). Healthcare professionals consistently ranked the following factors as the top five clinical situations causing the greatest degree of moral distress. The factor ranked as number 1 for all professional roles except dieticians was "Witness healthcare providers giving "false hope" to a patient or family". Dieticians ranked "Watch patient care suffer because of a lack of provider continuity" as the number one cause of their moral distress. The other highly ranked clinical situations causing moral distress among the professional roles were focused on futility of care "Follow the family's wishes to continue life support even though I believe it is not in the best interest of the patient", initiation of life support "Initiate extensive life-saving actions when I think they only prolong death" and "Continue to participate in care for the hopelessly ill person who is being sustained on a ventilator when no one will make a decision to withdraw support", and issues related to poor team communication "Witness diminished patient care quality due to poor team communication".

Independent Sample Student's *t* test

An Independent Sample Student's *t* test was performed to examine the difference in mean MDS-R scores between specialty certification and gender. Independent Sample

Student's *t* tests found no statistically significant difference in mean MDS-R scores between participants who earned specialty certification versus those who had not (*t* (221) = -.16, p = .872) or gender (*t* (221) = 1.6, p = .107) despite female participants reporting composite scores 10 points higher than males (*t* (221) = 1.6, p = .107).

Spearman's Rank Order correlation coefficient

We performed a Spearman's Rank Order correlation coefficient test to determine the relationships between mean MDS-R scores and level of education. The results indicated there was a significant, moderate relationship between mean MDS-R scores and level of education (r_s = -.235, p = .000). A significant difference in mean moral distress was found between the mean moral distress of participants in direct care and indirect care roles (see Table 1). Direct care providers included RNs, physicians, and respiratory therapists while indirect care providers included dieticians, social workers, and clergy. Respiratory therapists and RNs had the highest mean MDS-R scores which differed significantly from in-direct providers including clergy, dieticians, and social workers. Dieticians had significantly lower mean MDS-R scores than RNs and respiratory therapists.

Mean MDS-R scores for participants considering leaving their position now, were higher than those not considering quitting. Those with high mean moral distress scores (23) reported they were considering quitting now while those with lower moral distress scores (190) reported they were not considering quitting now. The other 10 did not respond to the question (Aim 2). and healthcare professionals who were considering leaving their position now (r_s = -.224, p = .001) (Aim 2).

Spearman's Rank Order correlation coefficient test was conducted to analyze the strength of the relationship between mean MDS-R scores and participant responses to team dynamics and team communication affecting their level of moral distress (Aim 3). The results indicated there was a significant, moderate relationship between mean MDS-R scores and team dynamics (r_s = .423, p = .000) and team communication (r_s = .447, p = .000) as well as a relationship between team dynamics and team communication (r_s = .830, p = .000). Eighteen percent of participants "strongly agreed" and 46% "agreed" that team dynamics and team communication affected their level of moral distress. Four percent of the participants "strongly disagreed" and twelve percent "disagreed" that team dynamics and team communication affected their level of moral distress.

Discussion

This study calls attention to six key findings that are similar to the results found in other studies examining moral distress among healthcare professionals. First, all participants in this study reported moral distress. This finding is similar to the results of two studies examining interprofessional providers who reported differences among professional roles (Whitehead et al., 2015; Dodek, Wong, Norena, Avas, Reynolds, Keenan, Hamric…Alden, 2016). These studies also found that the roles of respiratory therapists and RNs reported much higher mean MDS-R scores than physicians and in-direct healthcare providers. Previous studies examining healthcare professionals found similar differences among providers (Hamric et al., 2012; Allen, Judkins-Cohn, DeVelasco, Forges, Lee, Clark, & Procunier, 2013; Whitehead et al., 2015).

Second, this study found that mean MDS-R scores varied by type of ICU. Two other studies have documented finding higher mean MDS-R scores in adult ICU settings than in pediatric ICU settings (Whitehead et al., 2015; Allen et al., 2013). Third, consistent with previous studies, clinical situations related to futile care and end-of-life issues were reported as significantly contributing to participants moral distress (Hamric et al., 2012; Dodek et al., 2016; Sirilla, Thompson, Yamokoski, & Chipps, 2017). Fourth, this study found a moderate relationship between mean MDS-R scores and participants level of education. A previous study by Sirilla (2014), found a similar relationship with mean MDS-R scores and education level. Fifth, higher mean MDS-R scores were seen among healthcare professionals considering leaving a position now. This finding has been reported in two studies involving similar participant roles among RNs, physicians, and other healthcare providers (Hamric et al., 2012, Whitehead et al., 2015). Sixth, the majority of participants in this study reported agreeing that team dynamics and team communication has affected their feelings of moral distress. Findings by Hamric et al., (2012) and Bruce et al., (2015) support this study's finding.

This study moves the field of moral distress research forward by deliberately addressing the relationship that team dynamics and team communication have on the development of moral distress. Collectively, over half of the participants agreed or strongly agreed that adverse team dynamics and poor team communication contributed to their moral distress. Previous studies have examined these factors anecdotally. By examining these factors in a purposeful manner and hearing the direct voice of the healthcare provider by examining written-in text on additional factors causing them moral distress, we can better address what is happening within healthcare teams above

and beyond the 21-item MDS-R survey items. These unique participant perceptions are new and merit further examination to develop targeted interventions aimed at reducing moral distress in healthcare professionals.

The clinical implications of our findings demonstrate a clear relationship between moral distress and direct care providers. These findings suggest that respiratory therapists and RNs, who spend a greater amount of time at the bedside and have a greater professional responsibility for patient outcomes, have more moral distress than in-direct providers. This finding may represent the contributing factor of professional role, proximity and duration of patient interaction. In-direct providers who spend less time with patients demonstrated significantly lower moral distress than respiratory therapists and RNs. Our findings suggest that all professional roles, regardless of decision making authority, experienced moral distress related to the implementation or continuation of care they deemed futile or not beneficial.

Participants in this study contributed text detailing other factors that affected their moral distress. Representing all professional roles, ten percent of the respondents added situations that impacted their level of moral distress (Table 4). A clergy team member commented that they experienced moral distress when providing spiritual and emotional support to alleged abusers. A physician commented feeling pressure from others to order unnecessary tests and treatments and finds the process of debriefing after a code to be very helpful in avoiding moral distress. A RN commented that a lack of insight into the perspective of the direct care RN by administration contributed to moral distress. A respiratory therapist commented that a lack of physician collaboration in treatment modalities impacted their moral distress.

These unique perspectives of healthcare providers add to the understanding of the contributing factors of moral distress and reflect clinical situations not fully explained by the MDS-R survey. Our findings suggest that approaches to reduce moral distress should focus on debriefing during critical situations, improving team dynamics and communication, providing education on team communication practices to improve interdisciplinary discussions among team members, and mentorship and enablement of a supportive organizational culture.

A limitation of this study is sampling bias from including study participants from only four specialty ICU settings in a single academic medical center hospital. Therefore, these results may not be generalizable to other academic medical center hospitals or to other hospitals in general. An additional limitation of the study is the use of a structured self-report questionnaire. These self-report questionnaires are vulnerable to reporting and response biases. Also, response set biases may have been encountered independently of item content. There is a potential for social desirability response bias on MDS-R survey items. Finally, it is unclear if fellows and residents who reported considering leaving a position were leaving as a result of completing fellowship or residency or due to feelings of moral distress

Conclusion

Moral distress in the ICU setting is a complex phenomenon requiring further study to develop interventions aimed at the internal, external and organizational factors contributing to healthcare professionals moral distress. All of the findings of this study are supported by previous research involving healthcare professionals caring for patients in the ICU (Whitehead et al., 2015; Dodek et al., 2016; Hamric et al., 2012; Bruce et al.,

2015). These findings suggest that moral distress is experienced across all disciplines and in all clinical settings. While ICUs routinely incorporate a team-based approach to manage patient care effectively, little research has focused on the role of moral distress and team dynamics among interprofessional ICU teams. Some researchers have found that unhealthy work environments reporting poor team communication and collaboration contribute to the development of moral distress (McAndrew & Leske, 2011) while other studies suggest that an overall lack of team collaboration is the cause (Henrich, Dodek, Alden, Keenan, Reynolds, & Rodney, 2016). A study conducted by Whitehead et al. (2015), found that the most significant predictor of developing moral distress for all professionals observed was watching patient care suffer due to lack of continuity and poor communication.

As all professional groups in this study rated "Witness diminished patient care quality due to poor team communication" as one of the top contributors of their moral distress, targeted strategies to enhance team communication and improve team dynamics would be a logical place to begin to reduce moral distress among interprofessional teams. The findings of this study support that future interventions to reduce moral distress should focus on interprofessional team dynamics and team communication. Despite some study limitations, written-in text comments by participants related to additional factors contributing to moral distress reflect insightful new perspectives of the factors contributing to moral distress among interprofessional healthcare providers.

Recommendations

There is a clear need to expand the focus of research on moral distress in disciplines other than nursing and to approach research from an interprofessional perspective reflecting the current demand for a team-based approach to patient care. It has been suggested by other researchers that in the future, we should consider approaching clinical teams as communities where interdisciplinary healthcare professionals can share their concerns relating to the patient's treatment plan, thus encouraging the norm to be one of mutual respect and mutual understanding.

The implementation of team collaboration exercises may encourage clinicians to think in terms of the moral wellness and health of the shared clinical environment. A greater understanding of the role of team dynamics and team communication contributing to the development of moral distress should encourage participants to engage in their work together in ways that seek to preserve the integrity of individual team members as well as the integrity and moral wellness of the interprofessional team.

To promote a robust understanding of moral distress among interprofessional teams, additional research is needed. There is a need for strong theoretical approaches to balance individual, external, and structural factors that shape experiences of moral distress. A better understanding of the relationship of team dynamics and team communication between healthcare professionals during challenging ethical issues could mitigate the potential threats to patient safety caused by moral distress. This better understanding of moral distress could lead to a more effective intervention in the future.

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Table 1

Moral Distress Scale-Revised Scores

Role (n)	**MDS-R Score (SD)**	**MDF Score (SD)**	**MDI Score (SD)**
RN (n=96)	85.83(47.8),3-229	28.09 (12.26)	46.48 (19.25)
Dietician (n=6)	25.67 (18.5),2-50	12.17 (7.09)	42.45 (15.17)
Social Worker (n=6)	67.67 (54.6),7-138	22.34, (13.62)	47.10 (24.11)
Clergy (n=10)	57.20 (28), 20-105	20.23, (8.14)	51.50, (13.05)
RT (n=26)	87.81 (39.5), 27-194	28.44, (11.92)	48.43 (16.94)
MD (n=79)	67.05 (40), 3-191	26.03, (12.38)	35.81 (16.15)
Unit			
MICU (n=40)	81.68 (48.8), 4-193	29.39 (12.32)	41.57 (17.39)
STICU (n=44)	85.81 (48.1), 8–217	30.17 (13.19)	45.98 (17.84)
PICU (n=65)	74.17 (38.3), 4–159	25.67 (11.06)	42.66 (17.03)
NICU (n=74)	68.70 (44.9), 2-229	23.37 (12.11)	42.49 (20.48)

Note. MDS-R scores reported in mean.

Table 2

MDS-R Survey Items Ranked

	RN Rank	MD Rank	Social Worker Rank	Clergy Rank	RT Rank	Dietician Rank
Follow the family's wishes to continue life support even though I believe it is not in the best interest of the patient.	1	1	1	1	1	3
Witness healthcare providers giving "false hope" to a patient or family.	4		2	3		5
Continue to participate in care for a hopelessly ill person who is being sustained on a ventilator, when no one will make a decision to withdraw support.	3	3	4	2	3	
Witness diminished patient care quality due to poor team communication.	5	4	5	5	5	2
Initiate extensive life-saving actions when I think they only prolong death.	2	2	3	4	2	4
Carry out the physician's orders for what I consider to be unnecessary tests and treatments.					4	
Watch patient care suffer because of a lack of provider continuity.		5	4			1

Note. Top five clinical scenarios ranked by professional role.

Table 3

Participant Demographics

Category	N, (%)	Mean MDS-R score (±SD)
Age:		
20-27	45 (20)	69.04 (44.73)
28-35	108 (48.4)	78.25 (44.73)
36-41	20 (9.0)	73.55 (40.78)
42-46	20 (9.0)	93.00 (55.48)
47-53	16 (7.2)	77.56 (56.27)
54-70	14 (6.3)	58.71 (35.16)
Education:		
Associate	22 (9.9)	101.73 (51.70)
Bachelor	90 (40.4)	83.36 (45.70)
Master	32 (14.3)	64.28 (38.40)
Doctorate	79 (35.4)	65.25 (39.79)
Certification:		
Yes	87 (39)	75.41 (45.67)
No	136 (61)	76.40 (44.28)
Role:		
RN	96 (43)	85.83 (47.86)
Dietician	6 (2.7)	25.67 (18.52)
Social Worker	6 (2.7)	67.67 (54.69)
Clergy	10 (4.5)	57.20 (28.01)
Respiratory Therapist	26 (11.7)	87.81 (39.53)
Physician	79 (35.4)	67.05 (40.09)
Years of Experience		
1-5	127 (57)	70.85 (43.12)
6-10	37 (16.6)	89.86 (42.39)
11-15	25 (11.2)	70.08 (31.06)
16-20	13 (5.8)	78.38 (52.52)
21-25	8 (3.6)	123.25 (76.82)
26-40+	13 (5.8)	67.08 (37.99)
Gender		
Male	64 (28.7)	68.41 (42.88)
Female	159 (71.3)	79.08 (42.88)

Note. The term “Nurse” includes registered nurses and advanced practice registered nurses. The term “Physician” includes attendings, fellows, and residents.

Table 4

Text Comments of Study Participants

Role	Mean MDS-R	Unit	Education	Comment
RN	65	NICU	Bachelor	Q 13: Follow physician's request not to discuss the child's prognosis with parents "Only delayed so MD can tell"
RN	3	NICU	Bachelor	Q 22: Other situations causing feelings of MD: Mother and/or child HIV+ and not being able to tell father he should be tested
RN	69	NICU	Bachelor	Q 10: Be required to care for patient's I don't feel qualified to care for: Especially floating to other units
RN	67	NICU	Bachelor	Q 22: Other situations causing feelings of MD: Too many tasks per nurse care ratio
RN	46	NICU	Bachelor	Q 22: Other situations causing feelings of MD: Continuing futile care due to parent wishes
RN	143	MICU	Bachelor	Q 22: Keep a patient in ICU with no chance of survival and let them continue with a means of medicine that is not therapeutic. Allowing patient's family abuse staff.
RN	61	PICU	Bachelor	Q 22: Other situations causing feelings of MD: Unable to consult Ethics because they (Ethics) are afraid of attending provider and will not take action
RN	93	NICU	Bachelor	Q 28: Considering leaving current position due to staff doc relations. Doctor leadership has very little to no respect for nursing staff. Behavior displayed by docs would NEVER be tolerated if the tables were turned
Clergy	20	PICU	Masters	Q 22: Other situations causing feelings of MD: Providing spiritual and emotional support to alleged abusers
Clergy	105	STICU	Masters	Q 22: Other situations causing feelings of MD: Inappropriate Life Gift behaviors

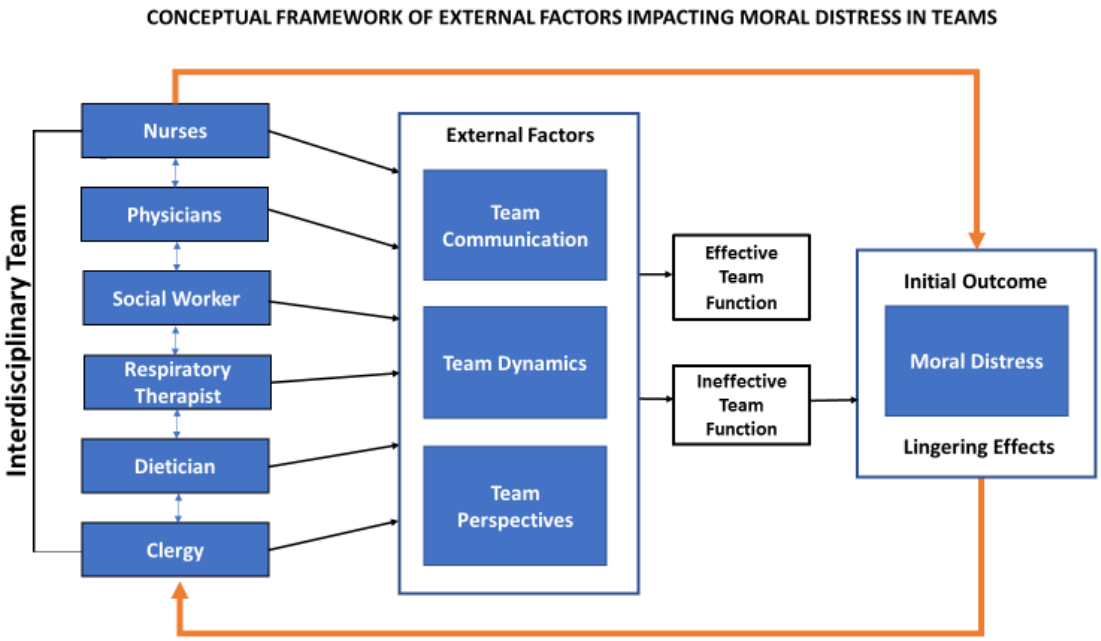
Role	Mean MDS-R	Unit	Education	Comment
RN	229	NICU	Bachelor	Q 22: Other situations causing feelings of MD: Unsafe staffing.
RN	93	STICU	Masters	Q 22: Other situations causing feelings of MD: Patient's families not getting enough information in order to make decisions
RN	118	STICU	Bachelor	I LOVE my job and the people I work with. The stressors are a part of the job and this is a teaching hospital.
Dietician	20	NICU	Bachelor	Q 3&4: Follow family's wishes to continue life support & initiate extensive lifesaving actions when I think they only prolong death: I don't personally experience this but have witnesses this from medical team
RN	140	PICU	Bachelor	Q 22: Other situations causing feelings of MD: When administration sits in meetings and does NOT get bedside nurses perspective, but think they do
RN	122	PICU	Bachelor	Q 22: Other situations causing feelings of MD: Taking care of illegals and people who refuse to speak English
Clergy	31	MICU	Masters	Q 3: Follow family's wishes to continue life support even though I believe it is not in the best interest of the patient. "Not personally, but have been part of family meeting where made"
RN	122	STICU	Bachelor	Q 22: Other situations causing feelings of MD: New staffing from other hospitals not competent which causes staff additional stress.
RT	81	MICU	Masters	Q22: Poor rounding/uninformed staff Q 24: Team communication has affected my level of MD Good Communication decreases distress.
MD	133	STICU	Doctorate	Q 22: Other situations causing feelings of MD: Providers who act like "DNR" means DO NOT TREAT. Q 23: Team dynamics has affected my level of MD: Good teams decrease

				distress. Q 24: Team communication has affected my level of MD Good Communication decreases distress.
MD	191	STICU	Doctorate	Q 22: Other situations causing feelings of MD: In caring for critically ill patients and identifying personal knowledge deficiencies but being judged harshly by supervisors when asking for help
RN	78	STICU	Masters	Q 25: Have you ever left or considered quitting a clinical position because of your MD with the way patient care was handled at your institution: Not at this institution, but yes at another institution.
Clergy	69	NICU	Masters	Q 22: Other situations causing feelings of MD: Fear of being perceived as approving of abortion.
MD	89	NICU	Doctorate	Q 28: Are you considering leaving your position now: No, but frequently dread going in to work due to these kinds of issues
RT	40	PICU	Bachelor	Q 24: Team communication has affected my level of moral distress: Physicians make vent changes without consulting Respiratory and no order is placed
MD	44	MICU	Doctorate	Q 6: Feel pressure from others to order what I consider to be unnecessary tests and treatments: I am asked, if I don't think necessary, I don't order it. Q 24: Team communication has affected my level of MD: Debriefing after a code is very helpful in avoiding distress.

Note. The term "RN" includes registered nurses and advanced practice registered nurses. The term "MD" includes attendings, fellows, and residents. The term RT includes respiratory therapists.

Appendix A

Conceptual Framework



Hamric, A. B., Borchers, C. T., & Epstein, E. G. (2012).

Appendix B

MDS-R Nurse Questionnaire (ADULT)

Moral distress occurs when professionals cannot carry out what they believe to be ethically appropriate actions because of internal or external constraints. The following situations occur in clinical practice. If you have experienced these situations they may or may not have been morally distressing to you. Please indicate how frequently you experience each item described and how disturbing the experience is for you. If you have never experienced a particular situation, select "0" (never) for frequency. Even if you have not experienced a situation, please indicate how disturbed you would be if it occurred in your practice. Note that you will respond to each item by checking the appropriate column for two dimensions: *Frequency* and *Level of Disturbance*.

	Frequency					Level of Disturbance				
	Never Very frequently					None Great extent				
	0	1	2	3	4	0	1	2	3	4
1. Provide less than optimal care due to pressures from administrators or insurers to reduce costs.										
2. Witness healthcare providers giving "false hope" to a patient or family.										
3. Follow the family's wishes to continue life support even though I believe it is not in the best interest of the patient.										
4. Initiate extensive life-saving actions when I think they only prolong death.										
5. Follow the family's request not to discuss death with a dying patient who asks about dying.										
6. Carry out the physician's orders for what I consider to be unnecessary tests and treatments.										
7. Continue to participate in care for a hopelessly ill person who is being sustained on a ventilator, when no one will make a decision to withdraw support.										
8. Avoid taking action when I learn that a physician or nurse colleague has made a medical error and does not report it.										
9. Assist a physician who, in my opinion, is providing incompetent care.										
10. Be required to care for patients I don't feel qualified to care for.										
11. Witness medical students perform painful procedures on patients solely to increase their skill.										

	Frequency					Level of Disturbance				
	Never				Very frequently	None				Great extent
	0	1	2	3	4	0	1	2	3	4
12. Provide care that does not relieve the patient's suffering because the physician fears that increasing the dose of pain medication will cause death.										
13. Follow the physician's request not to discuss the patient's prognosis with the patient or family.										
14. Increase the dose of sedatives/opiates for an unconscious patient that I believe could hasten the patient's death.										
15. Take no action about an observed ethical issue because the involved staff member or someone in a position of authority requested that I do nothing.										
16. Follow the family's wishes for the patient's care when I do not agree with them but do so because of fears of a lawsuit.										
17. Work with nurses or other healthcare providers who are not as competent as the patient care requires.										
18. Witness diminished patient care quality due to poor team communication.										
19. Ignore situations in which patients have not been given adequate information to insure informed consent.										
20. Watch patient care suffer because of a lack of provider continuity.										
21. Work with levels of nurse or other care provider staffing that I consider unsafe.										
If there are other situations in which you have felt moral distress, please write them and score them here:										
Team dynamics has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										
Team communication has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										

Have you ever left or considered quitting a clinical position because of your moral distress with the way patient care was handled at your institution?

No, I've never considered quitting or left a position _____ Yes, I considered quitting but did not leave____
Yes, I left a position_____ Are you considering leaving your position now? Yes No

Other Healthcare Provider (ADULT)

Moral distress occurs when professionals cannot carry out what they believe to be ethically appropriate actions because of internal or external constraints. The following situations occur in clinical practice. If you have experienced these situations they may or may not have been morally distressing to you. Please indicate how frequently you experience each item described and how disturbing the experience is for you. If you have never experienced a particular situation, select "0" (never) for frequency. Even if you have not experienced a situation, please indicate how disturbed you would be if it occurred in your practice. Note that you will respond to each item by checking the appropriate column for two dimensions: *Frequency* and *Level of Disturbance*.

	Frequency					Level of Disturbance				
	Never Very frequently					None Great extent				
	0	1	2	3	4	0	1	2	3	4
1. Provide less than optimal care due to pressures from administrators or insurers to reduce costs.										
2. Witness healthcare providers giving "false hope" to a patient or family.										
3. Follow the family's wishes to continue life support even though I believe it is not in the best interest of the patient.										
4. Initiate extensive life-saving actions when I think they only prolong death.										
5. Follow that family's request not to discuss death with a dying patient who asks about dying.										
6. Carry out the physician's orders for what I consider to be unnecessary tests and treatments.										
7. Continue to participate in care for a hopelessly ill person who is being sustained on a ventilator, when no one will make a decision to withdraw support.										
8. Avoid taking action when I learn that a physician or nurse colleague has made a medical error and does not report it.										
9. Assist a physician who in my opinion is providing incompetent care.										
10. Be required to care for patients I don't feel qualified to care for.										
11. Witness medical students perform painful procedures on patients solely to increase their skill.										

	Frequency					Level of Disturbance				
	Never Very frequently					None Great extent				
	0	1	2	3	4	0	1	2	3	4
12. Participate in care that does not relieve the patient's suffering because the physician fears that increasing the dose of pain medication will cause death.										
13. Follow the physician's request not to discuss the patient's prognosis with the patient or family.										
14. Witness increasing doses of sedatives/opiates given to an unconscious patient that I believe could hasten the patient's death.										
15. Take no action about an observed ethical issue because the involved staff member or someone in a position of authority requested that I do nothing.										
16. Follow the family's wishes for the patient's care when I do not agree with them but do so because of fears of a lawsuit.										
17. Work with nurses or other healthcare providers who are not as competent as the patient care requires.										
18. Witness diminished patient care quality due to poor team communication.										
19. Ignore situations in which patients have not been given adequate information to insure informed consent.										
20. Watch patient care suffer because of a lack of provider continuity.										
21. Work with levels of nurse or other care provider staffing that I consider unsafe.										
If there are other situations in which you have felt moral distress, please write them and score them here:										
Team dynamics has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										
Team communication has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										

Have you ever left or considered quitting a clinical position because of your moral distress with the way patient care was handled at your institution?

No, I've never considered quitting or left a position ____ Yes, I considered quitting but did not leave _____

Yes, I left a position_____ Are you considering leaving your position now? Yes No

Physician Questionnaire (ADULT)

Moral distress occurs when professionals cannot carry out what they believe to be ethically appropriate actions because of internal or external constraints. The following situations occur in clinical practice. If you have experienced these situations they may or may not have been morally distressing to you. Please indicate how frequently you experience each item described and how disturbing the experience is for you. If you have never experienced a particular situation, select "0" (never) for frequency. Even if you have not experienced a situation, please indicate how disturbed you would be if it occurred in your practice. Note that you will respond to each item by checking the appropriate column for two dimensions: *Frequency* and *Level of Disturbance*.

	Frequency					Level of Disturbance				
	Never Very Frequently					None Great Extent				
	0	1	2	3	4	0	1	2	3	4
1. Provide less than optimal care due to pressures from administrators or insurers to reduce costs.										
2. Witness healthcare providers giving "false hope" to the patient or family.										
3. Follow the family's wishes to continue life support even though I believe it is not in the best interest of the patient.										
4. Initiate extensive life-saving actions when I think they only prolong death.										
5. Follow the family's request not to discuss death with a dying patient who asks about dying.										
6. Feel pressure from others to order what I consider to be unnecessary tests and treatments.										
7. Continue to participate in care for a hopelessly ill person who is being sustained on a ventilator, when no one will make a decision to withdraw support.										
8. Avoid taking action when I learn that a physician or nurse colleague has made a medical error and does not report it.										
9. Assist another physician who in my opinion is providing incompetent care.										
10. Be required to care for patients I don't feel qualified to care for.										
11. Let medical students perform painful procedures on patients solely to increase their skill.										

	Frequency					Level of Disturbance				
	Never Very Frequently					None Great Extent				
	0	1	2	3	4	0	1	2	3	4
12. Provide care that does not relieve the patient's suffering because I fear that increasing the dose of pain medication will cause death.										
13. Request nurses or others not to discuss the patient's prognosis with the patient or family.										
14. Increase the dose of sedatives/opiates for an unconscious patient that I believe could hasten the patient's death.										
15. Take no action about an observed ethical issue because the involved staff member or someone in a position of authority requested that I do nothing.										
16. Follow the family's wishes of the patient's care when I do not agree with them but do so because of fears of a lawsuit.										
17. Work with nurses or other healthcare providers who are not as competent as the patient care requires.										
18. Witness diminished patient care quality due to poor team communication.										
19. Ignore situations in which patients have not been given adequate information to insure informed consent.										
20. Watch patient care suffer because of a lack of provider continuity.										
21. Work with levels of nurse or other care provider staffing that I consider unsafe.										
If there are other situations in which you have felt moral distress, please write them and score them here:										
Team dynamics has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										
Team communication has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										

Have you ever left or considered quitting a clinical position because of your moral distress with the way patient care was handled at your institution?

No, I've never considered quitting or left a position _____

Yes, I considered quitting but did not leave _____ Yes, I left a position_____

Are you considering leaving your position now? Yes No

Nurse Questionnaire (Pediatric)

Moral distress occurs when professionals cannot carry out what they believe to be ethically appropriate actions because of internal or external constraints. The following situations occur in clinical practice. If you have experienced these situations they may or may not have been morally distressing to you. Please indicate how frequently you experience each item described and how disturbing the experience is for you. If you have never experienced a particular situation, select "0" (never) for frequency. Even if you have not experienced a situation, please indicate how disturbed you would be if it occurred in your practice. Note that you will respond to each item by checking the appropriate column for two dimensions: *Frequency* and *Level of Disturbance*.

	Frequency					Level of Disturbance				
	Never Very frequently					None Great extent				
	0	1	2	3	4	0	1	2	3	4
1. Provide less than optimal care due to pressures from administrators or insurers to reduce costs.										
2. Witness healthcare providers giving "false hope" to parents.										
3. Follow the family's wishes to continue life support even though I believe it is not in the best interest of the child.										
4. Initiate extensive life-saving actions when I think they only prolong death.										
5. Follow the family's request not to discuss death with a dying child who asks about dying.										
6. Carry out the physician's orders for what I consider to be unnecessary tests and treatments.										
7. Continue to participate in care for a hopelessly ill child who is being sustained on a ventilator, when no one will make a decision to withdraw support.										
8. Avoid taking action when I learn that a physician or nurse colleague has made a medical error and does not report it.										
9. Assist a physician who in my opinion is providing incompetent care.										
10. Be required to care for patients I don't feel qualified to care for.										
11. Witness medical students perform painful procedures on patients solely to increase their skill.										

	Frequency					Level of Disturbance				
	Never Very frequently					None Great extent				
	0	1	2	3	4	0	1	2	3	4
12. Provide care that does not relieve the child's suffering because the physician fears that increasing the dose of pain medication will cause death.										
13. Follow the physician's request not to discuss the child's prognosis with parents.										
14. Increase the dose of sedatives/opiates for an unconscious child that I believe could hasten the child's death.										
15. Take no action about an observed ethical issue because the involved staff member or someone in a position of authority requested that I do nothing.										
16. Follow the family's wishes for the child's care when I do not agree with them but do so because of fears of a lawsuit.										
17. Work with nurses or other providers who are not as competent as the child's care requires.										
18. Witness diminished patient care quality due to poor team communication.										
19. Ignore situations in which parents have not been given adequate information to insure informed consent.										
20. Watch patient care suffer because of a lack of provider continuity.										
21. Work with levels of nurse or other care provider staffing that I consider unsafe.										
If there are other situations in which you have felt moral distress, please write them and score them here:										
Team dynamics has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										
Team communication has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										

Have you ever left or considered quitting a clinical position because of your moral distress with the way patient care was handled at your institution?

No, I've never considered quitting or left a position _____

Yes, I considered quitting but did not leave _____ Yes, I left a position _____
Are you considering leaving your position now? Yes No

Other Healthcare Provider (Pediatric)

Moral distress occurs when professionals cannot carry out what they believe to be ethically appropriate actions because of internal or external constraints. The following situations occur in clinical practice. If you have experienced these situations they may or may not have been morally distressing to you. Please indicate how frequently you experience each item described and how disturbing the experience is for you. If you have never experienced a particular situation, select "0" (never) for frequency. Even if you have not experienced a situation, please indicate how disturbed you would be if it occurred in your practice. Note that you will respond to each item by checking the appropriate column for two dimensions: *Frequency* and *Level of Disturbance*.

	Frequency					Level of Disturbance				
	Never Very frequently					None Great extent				
	0	1	2	3	4	0	1	2	3	4
1. Provide less than optimal care due to pressures from administrators or insurers to reduce costs.										
2. Witness healthcare providers giving "false hope" to parents.										
3. Follow the family's wishes to continue life support even though I believe it is not in the best interest of the child.										
4. Initiate extensive life-saving actions when I think they only prolong death.										
5. Follow that family's request not to discuss death with a dying child who asks about dying.										
6. Carry out the physician's orders for what I consider to be unnecessary tests and treatments.										
7. Continue to participate in care for a hopelessly ill child who is being sustained on a ventilator, when no one will make a decision to withdraw support.										
8. Avoid taking action when I learn that a physician or nurse colleague has made a medical error and does not report it.										
9. Assist a physician who in my opinion is providing incompetent care.										
10. Be required to care for patients I don't feel qualified to care for.										
11. Witness medical students perform painful procedures on patients solely to increase their skill.										

	Frequency					Level of Disturbance				
	Never Very frequently					None Great extent				
	0	1	2	3	4	0	1	2	3	4
12. Participate in care that does not relieve the child's suffering because physician fears that increasing the dose of pain medication will cause death.										
13. Follow the physician's request not to discuss the child's prognosis with parents.										
14. Witness increasing doses of sedatives/opiates given to an unconscious child that I believe could hasten the child's death.										
15. Take no action about an observed ethical issue because the involved staff member or someone in a position of authority requested that I do nothing.										
16. Follow the family's wishes for the patient's care when I do not agree with them but do so because of fears of a lawsuit.										
17. Work with nurses or other providers who are not as competent as the patient care requires.										
18. Witness diminished patient care quality due to poor team communication.										
19. Ignore situations in which parents have not been given adequate information to insure informed consent.										
20. Watch patient care suffer because of a lack of provider continuity.										
21. Work with levels of nurse or other care provider staffing that I consider unsafe.										
If there are other situations in which you have felt moral distress, please write them and score them here:										
Team dynamics has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										
Team communication has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										

Have you ever left or considered quitting a clinical position because of your moral distress with the way patient care was handled at your institution?

No, I've never considered quitting or left a position _____

Yes, I considered quitting but did not leave _____ Yes, I left a position _____

Are you considering leaving your position now? Yes No

Physician Questionnaire (Pediatric)

Moral distress occurs when professionals cannot carry out what they believe to be ethically appropriate actions because of internal or external constraints. The following situations occur in clinical practice. If you have experienced these situations they may or may not have been morally distressing to you. Please indicate how frequently you experience each item described and how disturbing the experience is for you. If you have never experienced a particular situation, select "0" (never) for frequency. Even if you have not experienced a situation, please indicate how disturbed you would be if it occurred in your practice. Note that you will respond to each item by checking the appropriate column for two dimensions: *Frequency* and *Level of Disturbance*.

	Frequency					Level of Disturbance				
	Never				Very Frequently	None				Great Extent
	0	1	2	3	4	0	1	2	3	4
1. Provide less than optimal care due to pressures from administrators or insurers to reduce costs.										
2. Witness other healthcare providers giving "false hope" to the family.										
3. Follow the family's wishes to continue life support even though I believe it is not in the best interest of the child.										
4. Initiate extensive life-saving actions when I think they only prolong death.										
5. Follow the family's request not to discuss death with a dying child who asks about dying.										
6. Feel pressure to order what I consider to be unnecessary tests and treatments.										
7. Continue to participate in care for a hopelessly ill child who is being sustained on a ventilator, when no one will make a decision to withdraw support.										
8. Avoid taking action when I learn that a physician or nurse colleague has made a medical error and does not report it.										
9. Assist another physician who in my opinion is providing incompetent care.										
10. Be required to care for children I do not feel qualified to care for.										
11. Let medical students perform painful procedures on patients solely to increase their skill.										

	Frequency					Level of Disturbance				
	Never Very Frequently					None				Great Extent
	0	1	2	3	4	0	1	2	3	4
12. Provide care that does not relieve the child's suffering because I fear that increasing the dose of pain medication will cause death.										
13. Request nurses or other providers not to discuss the child's prognosis with the family.										
14. Increase the dose of sedatives/opiates for an unconscious child that I believe could hasten the child's death.										
15. Take no action about an observed ethical issue because the involved staff member or someone in a position of authority requested that I do nothing.										
16. Follow the family's wishes for the patient's care when I do not agree with them but do so because of fears of a lawsuit.										
17. Work with nurses or other healthcare providers who are not as competent as the child's care requires.										
18. Witness diminished patient care quality due to poor team communication.										
19. Ignore situations in which parents have not been given adequate information to insure informed consent.										
20. Watch patient care suffer because of a lack of provider continuity.										
21. Work with levels of nurse or other care provider staffing that I consider unsafe.										
If there are other situations in which you have felt moral distress, please write them and score them here:										
Team dynamics has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										
Team communication has affected my level of moral distress Strongly Agree Agree Neutral Disagree Strongly Disagree										

Have you ever left or considered quitting a clinical position because of your moral distress with the way patient care was handled at your institution?

No, I've never considered quitting or left a position _____

Yes, I considered quitting but did not leave _____ Yes, I left a position ____

Are you considering leaving your position now? Yes No

Appendix C

Moral Distress Study Demographics

Please circle the selection best describing you

Age:

20-27 28-35 36-41 42-46 47-53 54-60 61-65 66-70

Education: **Specialty Certification:** Yes No

Associate Degree

Bachelor's Degree

Master's Degree

Doctorate Degree

Professional Role:

RN APRN Dietician Social Worker Clergy Respiratory Therapy

Physician Fellow Resident: PGY 1 PGY 2 PGY 3 PGY4 PGY5

Years of Professional Experience in the ICU:

1-5 6-10 11-15 16-20 21-25 26-30 31-35 36-40+

Gender: Male Female

Unit: Medicine ICU Shock Trauma ICU Pediatric ICU Neonatal ICU

Employment Status: Full-time Part-time

Appendix D

UTHSC CPHS Approval

UTHealth
The University of Texas
Health Science Center at Houston

Committee for the Protection of Human Subjects
6410 Fannin Street, Suite 1100
Houston, Texas 77030

Heather Vincent
Memorial Hermann Hospital System

October 19, 2017

HSC-MH-17-0820 - *Relationships of moral distress among interprofessional ICU teams.*

The above named project is determined to qualify for exempt status according to 45 CFR 46.101(b)

CATEGORY #2 *: Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:*

a. information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; AND ,

b. any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

(NOTE: The exemption under Category 2 DOES NOT APPLY to research involving survey or interview procedures or observation of public behavior when individuals under the age of 18 are subjects of the activity except for research involving observations of public behavior when the investigator(s) do not participate in the activities being observed.)

CHANGES: Should you choose to make any changes to the protocol that would involve the inclusion of human subjects or identified data from humans, please submit the change via iRIS to the Committee for the Protection of Human Subjects for review.

INFORMED CONSENT DETERMINATION:
Waiver of Consent Granted

HEALTH INSURANCE PORTABILITY and ACCOUNTABILITY ACT (HIPAA):
Exempt from HIPAA

STUDY CLOSURES: Upon completion of your project, submission of a study closure report is required. The study closure report should be submitted once all data has been collected and analyzed.

Should you have any questions, please contact the Office of Research Support Committees at 713-500-7943.

Appendix E

Memorial Hermann Health System Consent

MEMORIAL HERMANN
Clinical Innovation & Research Institute

December 15th, 2017

MEMORIAL HERMANN HEALTH SYSTEM APPROVAL FOR MEMORIAL HERMANN – TEXAS MEDICAL CENTER

Thank you for choosing Memorial Hermann as your service provider for this research study.

IRB ID: HSC-MH-17-0820 PRINCIPAL INVESTIGATOR: Heather Vincent

STUDY TITLE: Relationships of moral distress among inter-professional ICU teams.

NUMBER OF SUBJECTS: 75

Approval is hereby granted by Memorial Hermann Healthcare System to initiate this research study at the Memorial Hermann – Texas Medical Center location. This approval is subject to the Principal Investigator's acceptance of the following stipulations:

STUDY-SPECIFIC STIPULATIONS:

Data Security and HIPAA:

1. All data security computer devices and Protected Health Information used in this study must be password protected and/or data encrypted.

Other Stipulations:

2. Please remember to acknowledge the Memorial Hermann – Texas Medical Center in any publications resulting from this study, and provide a copy of the publication to the Vice President, Clinical Research for Memorial Hermann Clinical Innovation & Research Institute (Cheryl.Chanaud@memorialhermann.org). The methods of acknowledgement may include:
   a. Memorial Hermann – Texas Medical Center as an author's affiliation;
   b. mention in an "acknowledgement" section; or
   c. as a footnote.

Please sign and return a copy of this letter to the Memorial Hermann Clinical Innovation & Research Institute to the attention of eleonora.balibalita@memorialhermann.org to indicate your acceptance of our terms and policies (guidelines attached).

This study may not be initiated until the letter is signed and returned to the Memorial Hermann Clinical Innovation & Research Institute.

If you have questions or need additional information, please contact the Memorial Hermann Clinical Innovation & Research Institute at (713) 704-3430.

APPROVED:

Cheryl M. Chanaud 12/15/17

Cheryl M. Chanaud, PhD, CCRP
Vice President, Clinical Research
Clinical Innovation and Research Institute
Memorial Hermann Health System

Date

ACCEPTANCE:

Heather Vincent 12/15/17

Heather Vincent
Principal Investigator

Date

Attachments:
Memorial Hermann Clinical Innovation and Research Institute Guidelines

MEMORIAL HERMANN
Clinical Innovation & Research Institute

MEMORIAL HERMANN CLINICAL INNOVATION & RESEARCH INSTITUTE GUIDELINES

INSERVICE EDUCATION
The Investigator will provide in-service education regarding study procedures and requirements to all unit, clinic and/or department staff participating in the study including unit directors and managers.

PATIENT RECORDS/INFORMED CONSENT
The Joint Commission requires that the signed copy of the informed consent form for hospital-based studies be in all subjects' hospital medical records. In addition, the MHHS Authorization for Disclosure of Protected Health Information for Research (with IRB approval stamp) must be placed in all subjects' hospital medical records. The informed consent and disclosure form must remain in the subjects' charts.

RESEARCH ORDERS
Investigator must document in the medical record the subject's participation in the research study including consent process, study procedures, and treatments, with notation of research related procedures.

FINANCIAL RESPONSIBILITIES
Investigator agrees to make payment on the research account within 45 days of the billing date and according to the rates set forth in the attached Budget Worksheet. The budget provides a standard discount for research-related services. Research billing statements are distributed on a monthly basis. Please contact the MH Research Institute at (713) 704-4220 with billing questions. Past due accounts may be referred by Memorial Hermann to the appropriate Medical School Department Chair or Memorial Hermann Hospital CFO.

MEDICAL RECORD ACCESS
Requests for medical records must be submitted three (3) business days in advance. The Investigator must provide copies of the signed informed consent and MHHS Authorization for Disclosure of Protected Health Information for Research for each record requested. Records will be held in the Research Room for one week. There is a 20 record limit per request. At Memorial Hermann – TMC, the Research Room is open Monday through Friday, 8am-5pm. Please contact Health Information to make arrangements for after-hours access to records. Investigator must also provide three (3) business days notice of all monitoring visits to the Health Information Department (Medical Records).

DATA SECURITY
All data security computer devices used in this study must be password protected and/or data encrypted.

INVESTIGATIONAL DRUG SERVICE (IDS) PHARMACY
Upon receipt of the Memorial Hermann Approval Letter, IDS will need approximately two weeks to prepare the pharmacy protocol, create a distribution system, and in-service the Pharmacy staffs before enrollment of patients can begin. The Study Set-Up/Administrative Fee will be charged to the Research Billing Account once the preparation process is completed.

CONTINUING IRB REVIEW
Memorial Hermann requires continuous approval by the IRB for all research studies. The Principal Investigator is responsible for maintaining continuing review approval during the conduct of the study.

FEDERAL REGULATORY AGENCY
The MH Clinical Innovation & Research Institute must be notified, in advance, of any regulatory agency visit or review. Contact Cheryl M Chanaud, PhD, MHHS Vice President of Research, (713) 704-4216.

Appendix F

The University of Texas Invitation to Participate in Research Study

UTHealth
The University of Texas
Health Science Center at Houston

University of Texas Health Science Center at Houston
INVITATION TO TAKE PART IN RESEARCH
RELATIONSHIPS OF MORAL DISTRESS AMONG INTERPROFESSIONAL ICU TEAMS
HSC-MH-17-0820

INVITATION TO TAKE PART

You are invited to take part in a research project called, *Relationships of Moral Distress Among Interprofessional ICU Teams*, conducted by Heather Vincent, of the University of Texas Health Science Center at Houston (UTHealth), she will be called the Principal Investigator or PI. Your participation in this research study is completely voluntary. Completion of the survey implies your informed consent to participate. Responses are entirely confidential. You may refuse to answer any questions asked or written on any forms. This research project has been reviewed by the Committee for the Protection of Human Subjects (CPHS) of the University of Texas Health Science Center at Houston as HSC-MH-17-0820. The survey takes about 15 minutes to complete.

PURPOSE

The purpose of this research study is to better understand the factors that promote moral distress among interprofessional teams. A better understanding of moral distress could lead to effective interventions to prevent and/or treat the phenomenon among interprofessional teams in the future.

You have been invited to join this research study because you are a practicing healthcare provider and vital part of an interprofessional ICU team.

PROCEDURES

If you agree to take part in this study you will:

- Be provided a demographic and moral distress survey based on your professional role (nurse, physician, dietician, social worker, respiratory therapist or clergy). Survey forms will be located on each unit in color coded folders and will be available at information sessions regarding the study;
- Submit the completed survey to a designated locked drop box located on the following units: Shock Trauma ICU, Medicine ICU, Pediatric ICU, or Neonatal ICU.

Data collection will occur over a 1-month period, at the end of the study month the locked drop boxes will be collected by the PI. The PI will also round the units daily to collect completed surveys from the locked drop box.

TIME COMMITMENT

The total amount of time you will take part in this research study is 10-20 minutes to complete the surveys.

BENEFITS

Participants will receive no direct benefits for their participation, however, their participation may assist in identifying the precursors and effects of moral distress that guide future interventions.

Appendix G

Study Manual

Introduction

The purpose of this manual is to provide a guideline for data collectors or researchers. This document provides step-by-step instructions for the data collection process and is intended for use, to reduce error during the data collection process.

Purpose of Study

- Examine the level of moral distress among interprofessional healthcare providers working in four ICUs of a single academic hospital.
- Explore the relationship between levels of moral distress and demographic characteristics among interprofessional healthcare providers.
- Examine team dynamics and team communication among interprofessional healthcare providers.

Study Setting and Population:

The invitation to participate in this study was offered to all Registered Nurses (RNs), advanced practice registered nurses (APRNs), physicians, social workers, dieticians, clergy, and respiratory therapists working in the Medical ICU (MICU), Shock Trauma ICU (STICU), Pediatric ICU (PICU), and Neonatal ICU (NICU). Recruitment and data collection will occur in four ICUs at an academic medical center hospital.

Approvals and Permissions:

Study approval was obtained from University of Texas-Houston Health Science Center Committee for the Protection of Human Subjects (CPHS) and the Memorial Hermann Healthcare Systems.

Role of Principal Investigator

The Principal Investigator (PI) assumes the responsibility for all aspects of the study including proposal development and defense, screening and recruitment, data collection, data management, data analysis, data interpretation, writing up the final results and report, and presentation of findings. Furthermore, the PI serves as the coordinator of communication and activities between the parties involved in the study.

Assessing Eligibility

Inclusion Criteria: The inclusion criterion for participation in the study was full or part-time employment as an in-patient healthcare professional consistently assigned to work in STICU, MICU, PICU, and NICU. The professional groups examined were direct care staff RNs and APRNs working in the ICU, residents, fellows, and attending physicians admitting patients in the ICU, dieticians, social workers, respiratory therapists and clergy who were assigned to work in the MICU, STICU, PICU, NICU.

Exclusion criteria: The study excluded supplemental staff and administrative leaders working in these units.

Study Variables

Moral Distress: This will be measured with the 21-item MDS-R survey.

Demographic data: A demographic data questionnaire developed for the purpose of this study was used to collect data on participants' age, education, specialty certification (board certification for physicians), professional role, years of ICU experience, gender, unit, and employment status.

Supplies Needed for Recruitment and Data Collection:

- Paper copies of the MDS-R survey, demographic data questionnaire, and consent form
- Pencils or pens
- Locked drop box
- Large envelope to store completed MDS-R and demographic surveys

Recruitment Procedure

All eligible physicians were recruited by in-person presentations at Medical, Shock Trauma, Pediatric, and Neonatal ICU monthly service line meetings. Eligible RNs and APRNs, social workers, respiratory therapists, and clergy were recruited by in-person presentations before morning and evening shift reports and during monthly unit meetings.

Data Collection Procedure

- Paper MDS-R surveys were handed out to participants based on their professional role and ICU setting during recruitment.
- RNs and APRNs completed the registered nurse survey, residents, attendings and fellows completed the physician survey, and dieticians, clergy, respiratory therapists and social workers completed the other healthcare provider survey according to setting.
- Participants were advised that the survey could only be taken once.
- Participants were instructed to submit completed surveys in the designated locked drop box placed near the nurse's station in the ICU.
- Drop boxes were equipped with a cut out slot designed to accommodate the size of a folded in half survey.
- Completed surveys were collected from the locked boxes on the unit daily.
- The PI rounded on the units twice a day and collected the surveys from the locked drop boxes.
- As eligible participants submitted the demographic and MDS-R survey, their results were collected and imported into a secure computer excel spread sheet and then transferred

into an SPSS software (IBM SPSS Statistics, Version 25, 2017) managed by the researcher.

Post Questionnaire Completion

- Assign each participant's completed questionnaire a participant code.
- Place each completed questionnaire in the large envelope.

Data Management

- The PI is responsible for management and storage of all collected data.
- PI is responsible for entering the date in SPSS.
- PI and advisor will verify accuracy of data entry.
- Completed MDS-R and demographic surveys will be stored in a locked cabinet throughout the study and for five years post study.

Data Analysis

- Data analysis will be conducted by PI with assistance of a statistician.
- Conduct One-way ANOVA to determine the differences of mean MDS-R scores between professional roles and demographic characteristics.
- Perform descriptive statistics to describe the sample and to examine mean MDS-R scores among healthcare professionals.
- Perform Spearman's Rank Order correlation coefficient test and Independent Sample Student's *t* test to analyze the relationships and differences in mean MDS-R scores between professional groups, intent to leave a position, and among demographic characteristics.
- Perform Spearman's Rank Order correlation coefficient test to analyze the strength of the relationship between mean MDS-R scores and participant responses to team dynamics

and team communication affecting their level of moral distress by examining the percentage of respondent's answers to the specific questions.

Curriculum Vitae

Heather Vincent, PhD, MSN, RN, CPHRM

EDUCATION

University of Texas Health Science Center-Houston Cizik School of Nursing Nursing	2018	PhD
University of Texas-Houston Cizik School of Nursing Education	2018	MSN
University of Texas-Houston Cizik School of Nursing Leadership	2015	MS
University of Texas Medical Branch Galveston Nursing	1992	BSN
Galveston College Nursing	1987	ADN

PROFESSIONAL POSITIONS:

Memorial Hermann Hospital Houston, Texas Risk Manager	2012-present
Clear Lake Regional Medical Center Clear Lake, Texas Risk Manager	2011-2012
Shook, Hardy & Bacon LLP Houston, Texas Legal Nurse Analyst	1996-2011
Dow Chemical Freeport, Texas Occupational Health Nurse	1995-1996
Brazosport Memorial Hospital Lake Jackson, Texas Recovery Room Nurse	1993-1995

St. John Hospital Nassau Bay, Texas Emergency Room Nurse	1992-1993
The University of Texas Medical Branch Galveston, Texas ICU Nurse	1987-1992

PROFESSIONAL MEMBERSHIP:

Member of Greater Houston Society for Healthcare Risk Management	2012-present
Sigma Theta Tau International Honor Society of Nursing-Zeta Pi Chapter – President	2015-present
American Society for Bioethics and Humanities	2017-present

PRESENTATIONS:

"Texting While Driving" Poster Presentation Texas Children's Hospital Advanced Practice Provider Conference Houston, Texas	2017