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Relationships Among Climate of Care, Nursing Family Care and Family Well-being in Intensive Care Units

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RELATIONSHIPS AMONG CLIMATE OF CARE, NURSING FAMILY CARE AND FAMILY
WELL-BEING IN INTENSIVE CARE UNITS

by

Natalie S. McAndrew

A Dissertation Submitted in
Partial Fulfillment of the
Requirements for the Degree of

Doctor of Philosophy
in Nursing

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December 2017

ABSTRACT

RELATIONSHIPS AMONG CLIMATE OF CARE, NURSING FAMILY CARE AND FAMILY WELL-BEING IN INTENSIVE CARE UNITS

by

Natalie S. McAndrew

The University of Wisconsin-Milwaukee, 2017
Under the Supervision of Professor Rachel Schiffman

Family inclusion in health care delivery is vital for family well-being. However, intensive care (ICU) nurses experiencing frequent ethical conflict, low levels of organizational support and high levels of burnout may not be able to adequately care for families. The purpose of this study was to explore the relationships among variables related to the climate of care, nursing family care and family well-being in the ICU setting. A conceptual model derived from nursing, family, and organizational theories guided the study.

A cross-sectional, correlational design was used with a convenience sample of nurses ($n=115$) and family members ($n = 44$) from 5 ICUs at a Midwest hospital. The Ethical Conflict Questionnaire-Critical Care Version, Maslach Burnout Inventory-Human Services Survey and Hospital Ethical Climate Scale were used to measure the climate of care. The Family-Centered Care-Adult Version and Nurse Provided Family Social Support Scale were family measures of nursing family care, and the Family Well-being Index was used to measure family well-being.

There was an indirect effect of organizational resources on family-centered care through nurse depersonalization, indicating a possible mediation effect of nurse burnout. Nursing years in the current ICU had a direct effect on family well-being and family-centered care. Nurse years in the ICU had a negative relationship with family-centered care, suggesting family-centered care decreases as nurse years in the ICU increase. In contrast, there was a positive relationship

between family well-being and nursing years in the current ICU, indicating experienced ICU nurses may enhance family well-being. Organizational resources and depersonalization were significant predictors of family-centered care. There were weak, nonsignificant relationships between nurse provided family support and family well-being and family-centered care and family well-being.

This study highlights the importance of organizational resources, as well as the negative influence burnout may have on the delivery of family-centered care. Nursing experience was related to family-centered care and family well-being, supporting the need for educational and practice-based interventions to enhance nursing family care. Further research is needed to examine the relationships among the ICU climate of care, nursing family care and family outcomes.

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TABLE OF CONTENTS

LIST OF FIGURES	ix
LIST OF TABLES	x
LIST OF FIGURES AND TABLES IN MANUSCRIPTS	xii
ACKNOWLEDGEMENTS	xiii
CHAPTER I	1
Statement of the Problem	1
Significance	2
Families in the ICU as a Vulnerable Population	3
Prevalence of the Problem	4
Background	6
Gaps in the Science	10
Conceptual Framework	12
Study Purpose	14
Research Questions	14
Definition of Terms	15
Dissertation Structure	18
Manuscript	19
The ICU Nursing Family Care Conceptual Model	19
Chapter Summary	71
CHAPTER II	72
LITERATURE REVIEW	72
Search Strategy	72
Results for Family Focused Literature	76

Family Well-being	76
Family-Centered Care	80
Nurse Provided Family Support.....	86
Summary of Family Focused Literature.....	91
Critique of Family Literature	91
Results for Literature Related to the ICU Climate of Care.....	95
Ethical Conflict	95
Moral Distress	100
Manuscript.....	104
Moral Distress in Critical Care Nursing: The State of the Science.....	104
Organizational Resources for Ethical Conflict.....	142
Burnout.....	145
Summary of ICU Climate of Care Literature.....	149
Critique of ICU Climate of Care Literature	151
Discussion of Literature and Gaps in the Science	152
Chapter Summary	153
 CHAPTER III	 155
METHODS.....	155
Design	155
Setting	155
Family Sample	156
Family characteristics.....	159
Nurse Sample	162
Nurse characteristics	163
Measurement	165

Procedures	170
Family Recruitment.....	170
Nurse Recruitment	173
Data Management	174
Planned Analyses	175
Preliminary analyses.	175
Main analyses.....	176
Chapter Summary.....	183
 CHAPTER IV	 184
RESULTS.....	184
Missing Data Analysis	184
Descriptive Data Analysis.....	185
Preliminary Analyses Family Members.....	188
Preliminary Analyses Nurses	191
Preliminary Analyses Family Members and Nurses	195
Main Research Questions	196
RQ 1: To what extent and in what manner is family members’ perception of the quality of nursing family care predicted by the ICU climate of care variables?.....	196
RQ 2: To what extent and in what manner is family members’ well-being predicted by quality of family care and ICU climate of care variables?	198
RQ 3: What are the direct and indirect effects of the ICU climate of nursing care variables on the quality of nursing family care?	200
RQ 4: What are the direct and indirect effects of the climate of nursing care variables and quality of nursing family care on family well-being?.....	202
Chapter Summary	204

CHAPTER V	206
DISCUSSION.....	206
Summary of Main Findings.....	206
ICU Climate of Care	208
Depersonalization.....	209
FCC	210
Family Well-being	211
Manuscript.....	214
Climate of Care, Nursing Family Care and Family Well-being in the Intensive Care Unit	214
.....	214
Family Sample Findings	251
Nurse Sample Findings	252
Limitations	255
Implications for Nursing Practice and Policy.....	258
Organizational support for families.....	260
Healthy Work Environments.....	264
Implications for Nursing Education	266
Implications for Nursing Research	268
Conclusion.....	274
References.....	275
Appendix A: Evidence Table	322
Appendix B: Permissions.....	380
Appendix C: IRB Approval Letter	385
Curriculum Vitae.....	386

LIST OF FIGURES

<i>Figure 1.</i> A Conceptual model describing the relationships among variables for the current study	13
<i>Figure 2.</i> Search strategy for literature review.....	73
<i>Figure 3.</i> PRISMA flow diagram for studies selected for inclusion.....	74
<i>Figure 4.</i> Family member enrollment.....	159
<i>Figure 5.</i> Path model 1: Unstandardized regression coefficients for the relationship between nurse years and FCC as mediated by organizational resources.....	201
<i>Figure 6.</i> Path model 2: Unstandardized regression coefficients for the relationship between organizational resources and FCC as mediated by depersonalization.....	202
<i>Figure 7.</i> Path model 3: Unstandardized regression coefficients for the relationship between nurse years and family well-being as mediated by FCC.....	203
<i>Figure 8.</i> Path model 4: Unstandardized regression coefficients for the relationship between organizational resources and family well-being as mediated by FCC.....	204
<i>Figure 9.</i> Revised conceptual model based on study findings. The dashed line indicates a relationship found only in the nurse data. Dotted lines represent relationships with nurse and family data combined.....	207

LIST OF TABLES

Table 1. Literature Review Results	75
Table 2. Characteristics of Family Member Participants.....	160
Table 3. Characteristics of Critically Ill Family Member	161
Table 4. Characteristics of Nurses	163
Table 5. Nurse Employment Characteristics.....	164
Table 6. Nurse Years by Aggregate and Specialty ICU	165
Table 7. Preliminary Analyses Planned	178
Table 8. Main Research Questions and Analyses Planned	181
Table 9. Means for Family Variables	185
Table 10. Means for Nurse Variables	187
Table 11. One-Way ANOVA for ICU and Family Variables.....	189
Table 12. One-Way ANOVA for Family Relationship and Family Variables.....	190
Table 13. Means for Type of Family Relationship.....	190
Table 14. Intercorrelations for Family Variables	191
Table 15. One-Way ANOVA for ICU and Nurse Variables	192
Table 16. ANCOVA for Nurse Variables as Function of ICU.....	193
Table 17. Pairwise Comparisons for Nurse Variables.....	194
Table 18. Intercorrelations for Nurse Variables	195
Table 19. Intercorrelations for Family and Nurse Variables	196
Table 20. Hierarchical Regression Summary for Family-Centered Care	198
Table 21. Hierarchical Regression Summary for Family Well-being.....	200

Table 22. Direct and Indirect Effects Summary for Family-Centered Care	201
Table 23. Direct and Indirect Effects Summary for Family Well-being	203

LIST OF FIGURES AND TABLES IN MANUSCRIPTS

Manuscript 1: The ICU Nursing Family Care Conceptual Model.....	19
Table 1. Comparison of Applicable Theories.....	62
Figure 1. General Theoretical Foundation	69
Figure 2. Depiction of ICU Nursing Family Care Conceptual Model.....	70
Manuscript 2: Moral Distress in Critical Care Nursing: The State of the Science	104
Table 1: Evidence Table for Moral Distress Literature.....	134
Manuscript 3: Climate of Care, Nursing Family Care and Family Well-being in the Intensive Care Unit.....	214
Table 1: Family Measures.....	240
Table 2: Nurse Measures	240
Table 3: Family Member Characteristics.....	241
Table 4: Patient Characteristics	242
Table 5: Nurse Response Rates by ICU and Characteristics	243
Table 6: Descriptive Statistics for Family Measures	244
Table 7: Descriptive Statistics for Nurse Measures.....	244
Table 8: Intercorrelations Among Nurse and Family Variables.....	246
Table 9: Hierarchical Regression Analysis for Family-Centered Care	246
Table 10: Hierarchical Regression Analysis for Family Well-being.....	247
Figure 1: Conceptual Model	247
Figure 2: Family member enrollment	248
Figure 3: Path Model 1	248
Figure 4: Path Model 2	249
Figure 5: Path Model 3	249
Figure 6: Path Model 4	249
Figure 7: Revised Model Based on Study Findings.....	250

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CHAPTER I

More than 5.7 million patients are admitted to intensive care units (ICUs) each year in the United States (Society of Critical Care Medicine, 2017). Many of these patients will require multiple life-supportive treatments to stabilize acute or chronic medical conditions. Forty-four percent of ICU patients are unable to participate in decisions about their care within the first 24 hours of admission to a critical care unit (Cook et al., 2001), and most cannot make health related decisions during the course of critical illness (Curtis & White, 2008; Thompson et al., 2004). Families subsequently must direct the care of their family member (Curtis & White, 2008) and experience a heavy burden in these situations (Limerick, 2007; MacDonald, Weeks, & McInnis-Perry, 2011; Wiegand, 2008). Families have reported inadequate support during these experiences and a need for greater ICU nurse involvement in family care (Adams, Anderson, Docherty, Steinhauser, & Bailey, 2014; Karlsson, Forsberg, & Bergbom, 2010; Lind, Lorem, Nortvedt, & Hevrøy, 2012; Nelms & Eggenberger, 2010).

Statement of the Problem

Choices about life-supportive treatments are complicated by advancing technology (Chandler, 2014; Timmermans & Berg, 2003). Initiating, continuing, stopping or withholding life-sustaining treatments is laden with conflicting ethical principles, professional values, legal concerns and personal beliefs (Callahan, 2000; Cronqvist & Nyström, 2007; Jameton, 1984). Nurses' ethical concerns about the treatment choices families make may contribute to a lack of family involvement and support in critical care (Pavlish, Brown-Saltzman, So, Heers, & Iorillo, 2015; Wiegand & Funk, 2012). Family inclusion in health care delivery is vital for positive patient and family outcomes (M. A. McCubbin & McCubbin, 1993; Söderström, Saveman, Hagberg, & Benzein, 2009). Inadequate family support as a consequence of ethical conflict may

negatively affect the health and well-being of critically ill patients and their family members (Paul & Rattray, 2008; Wiegand & Funk, 2012).

Significance

Families are confronted with temporary or permanent alterations in their family system when a family member is hospitalized for a critical illness (Bennum, 1999). The ICU experience has been described by family members as a time of uncertainty, strong emotions, confusion, loneliness, and suffering (Agård & Harder, 2007; Eggenberger & Nelms, 2007; Gutierrez, 2013; Lind, Lorem, Nortvedt, & Hevrøy, 2011; Nelms & Eggenberger, 2010; Söderström, Saveman, Hagberg, & Benzein, 2009). The consideration of various life-sustaining measures for a critically ill family member is extraordinarily difficult for families (Gutierrez, 2013; Limerick, 2007; MacDonald, Weeks, & McInnis-Perry, 2011). Family members may not accept the futility of life-support as quickly as nurses (Hsieh, Shannon, & Curtis, 2006; Wiegand, 2008). Differences in the perspectives of the health care team and family members can contribute to conflicts about goals of care for the patient (Anstey, Adams, & McGlynn, 2015; Edwards, Thronson, & Dyck, 2012; Edwards, Thronson, & Girardin, 2012; Henrich et al., 2016; Thompson et al., 2004).

In early studies, and more recent literature, families have reported inadequate nurse support in the ICU environment (Eggenberger & Nelms, 2007; Hupcey, 1998, 1999; Karlsson, Forsberg, & Bergbom, 2010; Lind, Lorem, Nortvedt, & Hevrøy, 2012; Nelms & Eggenberger, 2010; Norton, Tilden, Tolle, Nelson, & Eggman, 2003; Segaric & Hall, 2015; Wong, Liamputtong, Koch, & Rawson, 2015). Ethical conflict in nurses and physicians may compromise communication with families and limit family support interventions (Gutierrez, 2005, 2012, 2013; Norton et al., 2003; Wiegand & Funk, 2012). Poor family care as a

consequence of conflict increases the risk for adverse family outcomes (Fassier & Azoulay, 2010; Nelms & Eggenberger, 2010).

There is a plethora of literature addressing ethical conflict in critical care. Conflicting ethical principles, professional values, or beliefs contribute to the experience of ethical conflict, and may lead to disagreements about patient care (Hsieh et al., 2006; Pavlish, Hellyer, Brown-Saltzman, Miers, & Squire, 2015; Studdert et al., 2003). Ethical conflict sequelae for nurses include moral distress and burnout, resulting in patient and family avoidance, depersonalization of patients, and an emotionally distant presence during patient and family care (Corley, 2002; De Villers & DeVon, 2013; Meltzer & Huckabay, 2004; Wiegand & Funk, 2012). Nurses report that ethical conflict is a significant issue in the ICU, and can prolong patient suffering by delaying decisions about life-sustaining treatments (Azoulay et al., 2009; Studdert et al., 2003; Wiegand & Funk, 2012).

Families in the ICU as a Vulnerable Population

Families experience moderate to high levels of distress when their family member is in the critical care unit (Anderson, Arnold, Angus, & Bryce, 2008, 2009; Baumhover & May, 2013; Day, Haj-Bakri, Lubchansky, & Mehta, 2013; McAdam, Dracup, White, Fontaine, & Puntillo, 2010; McAdam, Fontaine, White, Dracup, & Puntillo, 2012; Turner-Cobb, Smith, Ramchandani, Begen, & Padkin, 2016), and report adverse psychological, emotional, and physical symptoms. (Baumhover & May, 2013; Davis et al., 2005; Eggenberger & Nelms, 2007; Johansson, Hildingh, Wenneberg, Fridlund, & Ahlström, 2006; Kentish-Barnes, Lemiale, Chaize, Pochard, & Azoulay, 2009; Nelms & Eggenberger, 2010; Olding et al., 2016; Paul & Rattray, 2008). Family vulnerability in the critical care environment is well-documented (Baumhover & May, 2013; Eggenberger & Nelms, 2007; McAdam et al., 2010; Nelms & Eggenberger, 2010;

Söderström et al., 2009; Vandall-Walker & Clark, 2011). When a critically ill patient's prognosis supports a moderate to high risk of death, the family unit may be confronted with additional stress as they make choices about starting, stopping, or continuing life-sustaining treatments for their family member. It is established in prior research that decisions about life-sustaining treatments are extremely difficult for families (J. Adams, Anderson, Docherty, Steinhauser, & Bailey, 2014; Lind et al., 2012; Wiegand, 2008). During the ICU experience families depend on nurses for information about their family member, reassurance, and to guide interactions with their critically ill family member (Eggenberger & Nelms, 2007; Leske, 1986; Molter, 1979; Nelms & Eggenberger, 2010; Wong et al., 2015). Although physicians play an important role in supporting family decision making, nurses remain continuously at the bedside in close proximity to patients and their family members (Peter & Liaschenko, 2004). Consequently, nurses are health care professionals who interact most frequently with family members (Eggenberger & Nelms, 2007; Zaforteza, Gastaldo, de Pedro, Sánchez-Cuenca, & Lastra, 2005). From the perspective of family members, nurses set the tone for patient and family care in the ICU (Eggenberger & Nelms, 2007; Nelms & Eggenberger, 2010). Therefore, the quality of nursing family care is pivotal to achieving positive patient and family outcomes.

Prevalence of the Problem

A large portion of the literature addressing nurse provided family support or nurse-family relationships used descriptive, qualitative methodology. Families' concerns about inadequate support is a theme across these research studies (Blom, Gustavsson, & Sundler, 2013; Eggenberger & Nelms, 2007; Hupcey, 1998, 1999; Lind et al., 2012; Nelms & Eggenberger, 2010; Söderström, Benzein, & Saveman, 2003; Wong et al., 2015). Families also have described a lack of family involvement, visitation restrictions, and poor communication in the ICU setting

(Abbott, Sago, Breen, Abernethy, & Tulskey, 2001; J. Adams et al., 2014; Eggenberger & Nelms, 2007; Gallagher & Krawczyk, 2013; Hupcey, 1998, 1999; Limerick, 2007; Lind et al., 2011, 2012; Norton et al., 2003). Despite the importance of these findings and documented need for family care improvement, little progress has been made. Challenges and inadequacies in nursing family care are documented in more contemporary studies (J. Adams et al., 2014; A. Engström & Söderberg, 2007; B. Engström, Uusitalo, & Engström, 2011; Karlsson et al., 2010; Nelms & Eggenberger, 2010; Segaric & Hall, 2015; Stayt, 2007; Vandall-Walker & Clark, 2011; Wong et al., 2015; Zaforteza et al., 2005), and mirror those from the late 1990s and early 2000s (Chesla & Stannard, 1997; Holden, Harrison, & Johnson, 2002; Hupcey, 1998, 1999; Söderström et al., 2003).

Unsupportive nursing behaviors observed by families may be related to nurses' ethical concerns about treatment decisions for critically ill patients (Varcoe, Pauly, Storch, Newton, & Makaroff, 2012; Wiegand & Funk, 2012). In a survey of health care professionals from 323 ICUs in 24 different countries, 72% of the nurse and physician respondents reported at least one perceived ethical conflict within the last week of work, with a third of these conflicts related to disagreements with families (Azoulay et al., 2009). Nurse reported ethical conflict and resultant moral distress and burnout are prevalent in critical care (Azoulay et al., 2009; Hamric, Borchers, & Epstein, 2012; Poncet et al., 2007; Whitehead, Herbertson, Hamric, Epstein, & Fisher, 2015), and increase in frequency and severity in organizations with few resources for employees, patients, and families (Hamric et al., 2012; Pavlish, Brown-Saltzman, Fine, & Jakel, 2015; Pavlish, Hellyer, et al., 2015).

Although much is known about the influence of ethical conflict, moral distress and burnout on nurse and organizational outcomes, there is a remarkable gap in the literature related

to how these variables, as well as nurse perceived organizational resources for ethical conflict, create a climate of care that may affect the quality of nursing family care and family outcomes. Therefore, the goal of this study was to explore the relationship between the ICU climate of care and family members' perceived quality of nursing family care, and whether these variables were related to family well-being.

Background

The ICU experience affects the family's social, emotional and physical well-being (Baumhover & May, 2013; Davis et al., 2005; Eggenberger & Nelms, 2007; Johansson et al., 2006; Kentish-Barnes et al., 2009; Olding et al., 2016; Paul & Rattray, 2008). Family stress and strain is associated with decreased family well-being (Leske & Jiricka, 1998). There is a positive relationship between family adaptation and patient (McLain & Dashiff, 2008) and family well-being (Leske & Jiricka, 1998). Despite these findings and the theoretical importance of family well-being, there is a paucity of current literature addressing family well-being in the ICU (Hakio, Rantanen, Åstedt-Kurki, & Suominen, 2015; Leske & Brasel, 2010; Leske, McAndrew, Brasel, & Feetham, 2017).

Family-centered care (FCC) is a philosophy with a central premise of partnerships among health care professionals, patients and families (Institute for Patient-and Family-Centered Care, 2010). Elements include respect, information sharing, family participation, and collaboration (Davidson et al., 2017; Davidson et al., 2007). Nursing care that incorporates a FCC approach in clinical practice include family participation in routine patient care, family involvement in rounds, and family presence during invasive procedures or resuscitation (Al-Mutair, Plummer, Brien, & Clerehan, 2013; Davidson, 2009; Davidson et al., 2017; Davidson et al., 2007). Despite the importance of FCC, numerous barriers to true implementation of this approach to care exist,

such as competing needs of the patient and family, and nursing attitudes about FCC delivery (McConnell & Moroney, 2015). Nurses often focus more on the technical aspects of patient care than family emotional support (Chesla & Stannard, 1997; Ganz & Yoffe, 2012; Wong et al., 2015). Critical nursing interventions for unstable patients compete with family care (Kean & Mitchell, 2014) and impose limits on family presence at the bedside (Ciufo, Hader, & Holly, 2011).

Nurses have been studied as a form of ICU family support (Dinç & Gastmans, 2013; Hakio et al., 2015; Hupcey, 1999; Norton et al., 2003; Stayt, 2007). Families describe nurses constant presence as a source of connection in the ICU environment (Eggenberger & Nelms, 2007; Nelms & Eggenberger, 2010). Nurse provided family support includes family reassurance, sharing vital patient information, as well as encouraging family participation in care (Eggenberger & Nelms, 2007; Nelms & Eggenberger, 2010; Wong et al., 2015). Despite the importance of these findings, the relationship between nurse support and family outcomes remains largely unexplored. Only one known pilot study specifically examined the relationship between nurse provided family support and the outcome of family health, and these variables were positively correlated (Hakio et al., 2015).

Although the importance of nurses' role in family care is emphasized in the literature, it has been documented in prior research that nurses can be unsupportive of families (Azoulay et al., 2009; Chesla & Stannard, 1997; Eggenberger & Nelms, 2007; Hupcey, 1999; Nelms & Eggenberger, 2010; Norton et al., 2003; Wong et al., 2015). Nurses report challenges balancing job responsibilities, and describe creating physical and emotional space between themselves and family members (Stayt, 2007). From the families' perspective, nurse behaviors such as inconsistent information, abrupt communication, or keeping a distance from the family make the

family ICU experience more difficult (Hupcey, 1998; Segaric & Hall, 2015; Vandall-Walker & Clark, 2011; Wong et al., 2015). Nurses may control the family's proximity to the patient (Hupcey, 1999), and nurse-family conflicts are more likely to result in limitation of family visiting hours (Azoulay et al., 2009).

A number of practice environment and organizational factors may influence nurses' ability to support families in the ICU. Ethical conflict, nurse burnout, and inadequate organizational resources for ethical conflict have the potential to undermine nursing family care. Moral distress is a response to ethical conflict (Falcó-Pegueroles, Lluch-Canut, & Guàrdia-Olmos, 2013) that has been studied extensively in critical care nurses (Browning, 2013; Corley, Minick, Elswick, & Jacobs, 2005; Elpern, Covert, & Kleinpell, 2005; Karanikola et al., 2014; Kleinknecht-Dolf et al., 2015; Leggett, Wasson, Sinacore, & Gamelli, 2013; McAndrew, Leske, & Garcia, 2011; Mobley, Rady, Verheijde, Patel, & Larson, 2007; Molazem, Tavakol, Sharif, Keshavarzi, & Ghadakpour, 2013; O'Connell, 2015; Papathanassoglou et al., 2012; Sauerland, Marotta, Peinemann, Berndt, & Robichaux, 2014; M. A. Wilson, Goettemoeller, Bevan, & McCord, 2013). Repeated exposure to ethical conflict and frequent experiences of unresolved moral distress may lead to burnout (Falcó-Pegueroles et al., 2013; Meltzer & Huckabay, 2004; Meth, Lawless, & Hawryluck, 2009; Poncet et al., 2007; Rushton, Batcheller, Schroeder, & Donohue, 2015; Sundin-Huard & Fahy, 1999). Consequentially, symptoms of burnout, including emotional exhaustion, depersonalization of patients and families, and low levels of personal accomplishment (Maslach, Leiter, & Schaufeli, 2009; Maslach, Schaufeli, & Leiter, 2001) may hinder nurses ability to address patient and family needs (Aghabarary & Nayeri, 2016; Embriaco, Papazian, Kentish-Barnes, Pochard, & Azoulay, 2007; Epp, 2012).

Nurses' perception of organizational resources for ethical conflict and the resultant work environment may potentiate ethical conflict due to institutional barriers that hinder nursing autonomy and holistic care (Huffman & Rittenmeyer, 2012; Moss, Good, Gozal, Kleinpell, & Sessler, 2016). Factors such as the overwhelming demands of the ICU environment, critical care technology that does not meet patient needs, and a lack of nursing support for resolution of ethical conflict contribute to nurses' inability to deliver high quality patient and family care (Maiden, Georges, & Connelly, 2011; Mason et al., 2014; Pavlish, Hellyer, Brown-Saltzman, Miers, & Squire, 2013; Sauerland et al., 2014; Varcoe et al., 2012).

The ethical climate of the organization and the nurse work environment are interdependent (Humphries & Woods, 2016). Inadequate nurse leader support and overwork may decrease nursing attention to the resolution of ethical concerns in clinical practice (Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Shorideh, Ashktorab, & Yaghmaei, 2012; Varcoe et al., 2012) and limit patient and family advocacy (Varcoe et al., 2012; Wiegand & Funk, 2012). Nurses report that moral distress interferes with their ability to provide care, and negatively affects families as the result of poor communication and prolonged patient deaths in the ICU (Bruce, Miller, & Zimmerman, 2015; Choe, Kang, & Park, 2015; Maiden et al., 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Shorideh et al., 2012; Varcoe et al., 2012; Woods, Rodgers, Towers, & La Grow, 2015). There is a perceived lack of institutional resources for families and nurses experiencing distress among ICU nurses (Henrich et al., 2016; Varcoe et al., 2012).

In summary, nurse provided family support is influenced by broader organizational factors, including the work environment and organizational resources for ethical conflict

resolution (Chesla & Stannard, 1997; Humphries & Woods, 2016; Pavlish et al., 2013). Nurses are unable to provide high quality family care when there is inadequate institutional support (Humphries & Woods, 2016; Varcoe et al., 2012), and this may negatively affect family outcomes in the ICU.

Gaps in the Science

From the perspective of family care, few studies have measured FCC or nurses' contributions to family support (Astedt-Kurki, Tarkka, Rikala, Lehti, & Paavilainen, 2009; Mitchell, Burmeister, Chaboyer, & Shields, 2012; Mitchell, Chaboyer, Burmeister, & Foster, 2009). Although family well-being has been used as an outcome variable in family research, there is a paucity of research related to family well-being in the adult ICU setting (Leske, 2000; Leske & Jiricka, 1998; Leske et al., 2017).

Theoretical and empirical evidence suggest that further research related to ethical conflict and its relationship to nursing family care quality is needed (Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Pavlish, Hellyer, et al., 2015). Some studies have examined the consequences of ethical conflict and moral distress from the nurse perspective (Varcoe et al., 2012; Wiegand & Funk, 2012); however, no studies have specifically measured the relationships among ethical conflict, organizational resources, nurse burnout, nursing family care, and family outcomes in the ICU. Further, nurses' perception of organizational resources for ethical conflict is an important determinant of nurse moral distress and burnout, and may be related to nursing family care quality. A lack of nurse provided family support and inadequate delivery of FCC may negatively influence family outcomes in the ICU. Few studies have explored this problem and the majority used qualitative methods (Chesla & Stannard, 1997; Eggenberger & Nelms, 2007; Henrich et al., 2016; Hupcey,

1998, 1999; Lind et al., 2012; Nelms & Eggenberger, 2010; Segaric & Hall, 2015; Varcoe et al., 2012; Wiegand & Funk, 2012; Wong et al., 2015).

It is well established in the health care safety literature that nursing work environments are the product of organizational cultural factors, and have the propensity to negatively or positively affect patient outcomes (Aiken et al., 2011; Cho, Chin, Kim, & Hong, 2016; Huddleston, 2014; Kelly, Kutney-Lee, Lake, & Aiken, 2013; Kirwan, Matthews, & Scott, 2013; Kutney-Lee et al., 2015; Lake et al., 2016; Laschinger & Leiter, 2006; Lucero, Lake, & Aiken, 2010). Given that ethical conflict and subsequent moral distress and burnout are determined, at least partially, by the quantity of organizational resources for ethical conflict, and related to the nursing practice environment (Klopper, Coetzee, Pretorius, & Bester, 2012; McAndrew et al., 2011; Pereira, Teixeira, Carvalho, & Hernandez-Merrero, 2016), they also may be related to nursing family care. However, to date, no study has specifically examined these factors in relationship to the family experience in the ICU.

FCC facilitators and barriers have been determined in prior research from the nurse perspective (Al-Mutair, Plummer, Brien, & Clerehan, 2014; El-Masri & Fox-Wasylyshyn, 2007; Garrouste-Orgeas et al., 2010; McConnell & Moroney, 2015; Mitchell et al., 2016). The current study aims to measure FCC and nurse provided family support from the perspective of families. Well-being has not been extensively studied in critically ill patient's family members, yet it remains an important positive family outcome measure. Exploring the ICU climate of care, quality of nursing family care, and family well-being, and determining the relationships among these variables adds to the science. This preliminary study may guide the selection of variables in subsequent studies, and inform intervention development at the family, nurse, and organizational levels in future research.

Conceptual Framework

An integrated conceptual framework was derived from the theoretical underpinnings of the Resiliency Model of Family Adjustment and Adaptation (RMFAA) (M. A. McCubbin & McCubbin, 1993), ecological and family systems perspectives, moral distress theory (Corley, 2002), and the healthy work environment framework (Huddleston, 2014). Multiple theories were utilized due to conceptual and empirical gaps in this area of nursing science. Model assumptions are 1) the family is an ecological system that uses resources (education, health, emotional support and family cohesiveness) to adapt during the crisis of a family member's critical illness (Broderick, 1993; Bronfenbrenner, 1979, 2005; H. I. McCubbin, Comeau, & Harkins, 1981; M. A. McCubbin & McCubbin, 1993; von Bertalanffy, 1968), and 2) the quality of nursing family care has the potential to strengthen or weaken the family's ability to adapt to a crisis (Astedt-Kurki et al., 2009; Hakio et al., 2015; M. A. McCubbin & McCubbin, 1993). A manuscript describing the development the ICU Nursing Family Care Conceptual Model (INFCCM) prepared for submission to the *Journal of Family Nursing* is included at the end of this chapter before the chapter summary.

The INFCCM is too complex for inclusion in one study; it must be deconstructed to identify the most salient components. The current study was guided by a condensed version of the INFCCM (Figure 1) described in the manuscript. The quality of family nursing care is an important determinant of the family's well-being (M. A. McCubbin & McCubbin, 1993) and the intermediary linking the ICU climate of care and family physical, social, and emotional well-being. The sub-concepts of the quality of nursing family care include: the family's perception of family-centered care, and nurse provided family support. Nurses are an instrumental family resource for emotional care and communication about a critically ill family member (J. Adams et

al., 2014; Lind et al., 2012). Family educational level also is included in the study conceptual framework as a determinant of family-wellbeing. Theoretically, pre-existing family resources influence family outcomes (M. A. McCubbin & McCubbin, 1993).

The ICU climate of care affects the quality of nursing family care. Sub-concepts include: ethical conflict, nurse perception of organizational resources for ethical conflict, and burnout. Ethical conflict is conceptualized as a precursor to moral distress and burnout (Rushton et al., 2015). Organizational resources for ethical conflict is a reflection of unit and hospital based support to address ethical conflict in nursing practice (Olson, 1998). A poor ICU climate of care occurs when nurses are exposed to frequent and severe ethical conflict (Falcó-Pegueroles et al., 2013; Jameton, 1984, 1993; Pavlish, Hellyer, et al., 2015), perceive a low level of organizational resources for ethical conflict (Hamric & Blackhall, 2007; Hamric et al., 2012; Pavlish, Brown-Saltzman, So, Heers, & Iorillo, 2015) and experience high levels of burnout, potentially exerting negative effects on the quality of nursing family care, and decreasing family well-being.

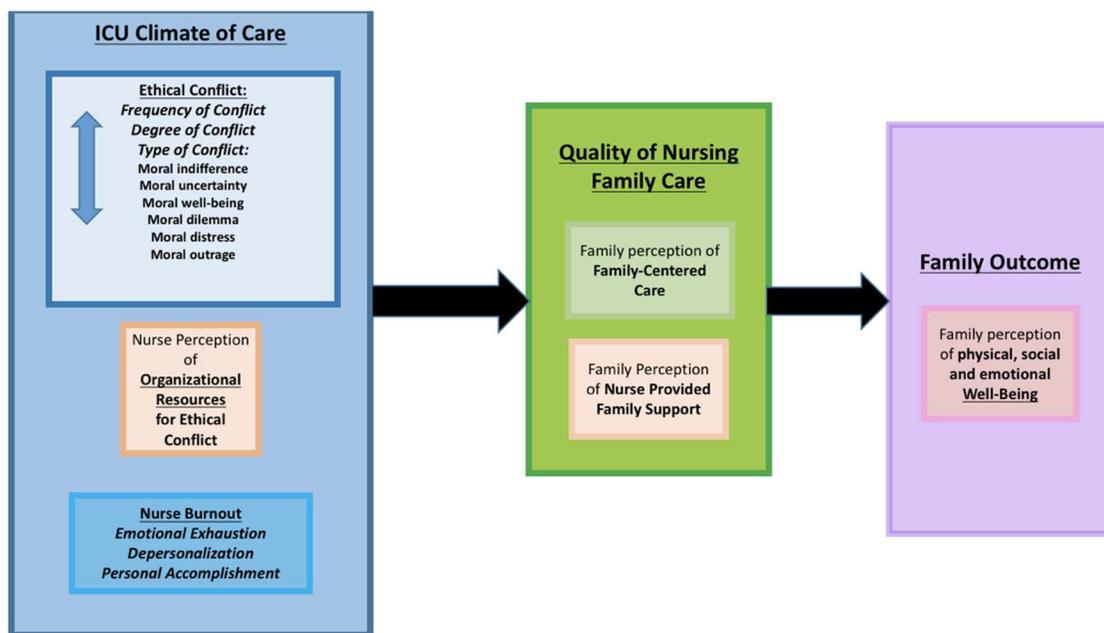


Figure 1. A Conceptual model describing the relationships among variables for the current study

Study Purpose

The purpose of the current study was to expand our understanding of how climate of care variables may relate to nursing family care and family well-being in the ICU setting. The specific goals were to:

1. Describe ethical conflict, organizational resources for ethical conflict, and burnout among a sample of critical care nurses.
2. Describe ICU families' perception of family-centered care, nurse provided family support, and well-being.
3. Determine if there are any differences in how family members perceive the quality of nursing family care or their well-being by specialty ICU and relationship to the critically ill patient.
4. Determine if there are any differences in how nurses perceive the ICU climate of care variables by specialty ICU and years working in a specialty ICU.
5. Determine relationships among the ICU climate of care variables, quality of nursing family care variables, and family well-being.

Research Questions

The main research questions were as follows:

1. To what extent and in what manner is family members' perception of the quality of nursing family care predicted by ICU climate of care variables?
2. To what extent and in what manner is family members' well-being predicted by the quality of nursing family care and ICU climate of care variables?
3. What are the direct and indirect effects of climate of care variables on the quality of nursing family care?

4. What are the direct and indirect effects of climate of care variables and quality of nursing family care on family well-being?

Definition of Terms

A critical aspect of family research is defining family (Åstedt-Kurki, Paavilainen, & Lehti, 2001; Feetham, 1991). The definition of family for the current study was two or more individuals who depend on each other for socialization, growth, physical, economical, spiritual, and emotional support, and are bound by biological, legal, or social relationships (Harmon Hanson & Kaakinen, 2005; Leske, 2000; Leske & Jiricka, 1998; Stuart, 1991).

Family well-being was defined as physical, social, and emotional well-being, consistent with the theoretical underpinnings of the Resiliency Model of Family Adjustment and Adaptation (H. I. McCubbin & Patterson, 1983a). Family health is the product of interactions among these dimensions (Black & Lobo, 2008; Harmon Hanson & Kaakinen, 2005; H. I. McCubbin & Patterson, 1983b, 1983c).

FCC was defined as family involvement and partnership in the delivery of healthcare for a critically ill family member (Institute for Patient-and Family-Centered Care, 2010). Nurse provided family support is understood in the current study as nurse-family interactions in which the nurse gives the family: 1) reassurance, 2) emotional support, 3) decision-making support, 4) acknowledges the family's contributions to care, and 5) devoted nursing time to family care (Astedt-Kurki et al., 2009). The family's perception of the quality of family nursing care is related to the degree FCC is delivered, and the amount of nurse provided family support. FCC and nurse provided family support are considered family resources specific to family needs in the ICU environment. The family's perceived quality of nursing family care is expected to influence family outcomes.

The ICU climate of care described the overall ethical milieu of the nursing practice environment. There were three determinants: 1) ethical conflict, 2) nurse perceived organizational resources for ethical conflict, and 3) nurse burnout. Ethical conflict is an experience in which the nurse perceives patient care is inconsistent with professional nursing values or ethics, and this may lead to a spectrum of moral responses in the nurse including moral distress or moral outrage (Falcó-Pegueroles et al., 2013). The definitions of these moral states for the purposes of the current study are consistent with those proposed by Falcó-Pegueroles et al. (2013):

- Moral indifference: A nurse is not concerned about an ethical issue and does not take an ethical stance.
- Moral well-being: Occurs when ethical assessment and action are aligned. The nurse is aware of the ethics of care and is able to follow through with a plan that is consistent with nursing ethics.
- Moral uncertainty: Is a state in which the nurse is not clear about whether or not ethical conflicts actually exist.
- Moral dilemma: There are at least two ethically appropriate nursing actions; however, only one can be implemented.
- Moral distress: a state in which the nurse perceives an ethically correct action; however, a barrier such as an institutional policy prevents the nurse from following through with a plan of care consistent with his or her ethical appraisal (Jameton, 1984; Wilkinson, 1987).

- Moral outrage: A nurse experiences frustration and anger related to the actions of others because he or she perceives certain treatment or care as immoral, or inconsistent with professional nursing values (Wilkinson, 1987).

Nurse burnout was defined as a state in which the nurse feels emotionally drained, uninterested in work, and unable to provide support to families (Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1996; Maslach et al., 2001). There were three components of burnout: 1) overwhelming emotional exhaustion, 2) detachment from one's work, cynicism and depersonalization, and 3) low levels of personal accomplishment and feelings of ineffectiveness (Maslach et al., 2009). Emotional exhaustion is a response to overwhelming demands of the job; to cope nurses emotionally and cognitively distance themselves from their work (Maslach et al., 2001). This may lead to depersonalization of patients and family members (Epp, 2012; Gutierrez, 2005). Emotional exhaustion and depersonalization of patients and family members contributes to overall feelings of inadequate personal accomplishment in one's role as a nurse and indifference about the job (Maslach et al., 2001).

Nurse perceived organizational resources for ethical conflict was conceptualized as the ethical climate of the organization and compass for moral action (Olson, 1995; Victor & Cullen, 1988). The ethical climate affects nurse decision-making related to action in ethical issues (Atabay, Çangarli, & Penbek, 2015). The ethical climate shapes the nurse working environment and includes: 1) one's perceptions about relationships with other professionals, 2) perceptions of leadership support (Malloy et al., 2009), 3) perceptions of resources to resolve ethical conflict, and 4) overall organizational culture and caring practices (Olson, 1995, 1998). The ethical climate and work environment are interdependent; thus, adversarial working environments can

negatively influence the perception of the ethical climate, and poor ethical climates can inhibit discussion of ethical concerns in clinical practice (Humphries & Woods, 2016).

Dissertation Structure

This dissertation includes three manuscripts prepared for submission or accepted for publication in a nursing journal. Chapter I includes a conceptual model development paper that provides the theoretical foundation for the study. This manuscript was prepared for the *Journal of Family Nursing*. Chapter II includes a state of the science paper on moral distress that was published in *Nursing Ethics*. A manuscript that summarizes the main findings and implications of the dissertation research was prepared for the *American Journal of Critical Care* and is presented after Chapter V. These manuscripts are woven into the traditional dissertation presentation in which the study is introduced in Chapter I, prior research is reviewed in Chapter II, study methods are presented in Chapter III, research findings are provided in Chapter IV, and a discussion that addresses findings in the context of prior literature, study limitations, and direction for future research is found in Chapter V.

The conceptual model manuscript is presented next. The chapter summary can be found on the page following the manuscript references.

Manuscript

The ICU Nursing Family Care Conceptual Model

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Abstract

Family is vital to holistic care of critically ill patients. Families depend on nurses as their primary source for information and emotional support; however, ethical conflict related to a family's treatment decisions for their critically ill family member may decrease family engagement. The nurse-family relationship is influenced by the culture of care within the ICU and health care organization. There is a substantial gap in critical care family theories related to the family's interaction with nurses, environments of care, and health care organizations. The purpose of this paper is to present the development of the ICU Nursing Family Care Conceptual Model (INFCCM) to guide critical care family research with attention to theoretical foundations and empirical support. Studying the intersection between nursing family care and ethical conflict is necessary for the development of effective nursing family care strategies in the ICU.

The ICU Nursing Family Care Conceptual Model

A family focus provides a wider lens to view individuals within health care systems. Despite the importance of family in the discipline of nursing, much of the existing research related to family in the ICU is not guided by a theoretical framework. In a recent integrated review of family-centered care interventions in adult ICUs, only 33% of the literature incorporated family theory (Mitchell et al., 2016). Family theoretical development has not received as much attention as other nursing phenomena (Leon & Knapp, 2008; Whall & Fawcett, 1991). Family has been incorporated into existing nursing theories; however, many of these theories are at a high level of abstraction making it difficult to apply to practice or guide nursing research (Harmon Hanson & Kaakinen, 2005; Leon & Knapp, 2008; Segaric & Hall, 2005). Family scholars have acknowledged a lack of empirical testing of family nursing theories, contributing to a poor theory, research, and practice connection in family nursing (Feetham, 1991; Segaric & Hall, 2005). Although there have been many advances in nursing science since the 1990s, ICU nursing family research requires a stronger theoretical foundation. There is a substantial gap in the theoretical and empirical ICU literature related to the family's interaction with health care professionals, environments of care, and health care organizations. The purpose of this paper is to discuss the ICU Nursing Family Care Conceptual Model (INFCCM) to guide further theoretical development and direction for future research.

Background

Of the five million patients admitted to intensive care units (ICUs) each year in the United States (Society of Critical Care Medicine, 2017), the majority are unable to make decisions about treatment (Cook et al., 2001; Thompson et al., 2004). Family members must make choices about life-sustaining therapies, adding additional stress to the ICU family

experience (Limerick, 2007; MacDonald, Weeks, & McInnis-Perry, 2011; Wiegand, 2008). Advancing technology can lead to ethical conflicts in the ICU (Azoulay et al., 2009; Meth, Lawless, & Hawryluck, 2009; Studdert et al., 2003). Health care professionals' concerns about treatment choices may contribute to a lack of family involvement and support (Pavlish, Hellyer, Brown-Saltzman, Miers, & Squire, 2015; Wiegand & Funk, 2012) and negatively affect the health outcomes of critically ill patients and their families (Bunch, 2000; Paul & Rattray, 2008; Wiegand & Funk, 2012).

Family members may not accept the futility of life-support measures as quickly as health care professionals (Hsieh, Shannon, & Curtis, 2006; Wiegand, 2008). Differences in the perspectives of the health care team and family can contribute to conflicts about patient goals of care (Sprung et al., 2007). Families report that inadequate health care professional support is a problem in the ICU environment (Eggenberger & Nelms, 2007; Lind, Lorem, Nortvedt, & Hevrøy, 2012; Nelms & Eggenberger, 2010; Wong, Liamputtong, Koch, & Rawson, 2015). Nurses have shared that in situations of conflict they tend to withdraw from families (Edwards, Thronson, & Dyck, 2012; Paradis et al., 2014). Ethical conflict experienced in health care professionals may lead to compromised communication with families, limited family support interventions, and delays in decision making that prolong nonbeneficial aggressive treatments and create increased psychological distress in family members (Fassier & Azoulay, 2010; Gutierrez, 2005, 2012, 2013; Pattison, 2004; Pavlish, Hellyer, et al., 2015; Wiegand & Funk, 2012).

Families depend on health care professionals, particularly nurses, for information and support when a family member is critically ill (Adams, Anderson, Docherty, Steinhauser, & Bailey, 2014; Lind et al., 2012). The relationship established between families and nurses is

influenced by the overall culture of care within the ICU and health care organization (Chesla & Stannard, 1997; Segaric & Hall, 2015; Vandall-Walker & Clark, 2011). Understanding the intersection between ethical conflict and family care is vital for the development of effective nursing family care strategies in the ICU. Factors such as the ICU work environment and ethics of care within the organization require exploration, as these have the propensity to influence family care delivery (Humphries & Woods, 2016; Segaric & Hall, 2015).

Existing Family Theories

There is a large body of literature describing family decision-making in the ICU (Gutierrez, 2012, 2013; Limerick, 2007; Lind, Lorem, Nortvedt, & Hevrøy, 2011; Lind et al., 2012; MacDonald et al., 2011; Wiegand, 2008), and the care nurses and physicians provide to families making end-of-life decisions (Bach, Ploeg, & Black, 2009; Gutierrez, 2013; Loghmani, Borhani, & Abbaszadeh, 2014; McAndrew & Leske, 2015; Tan & Manca, 2013). Grounded theory has been used to generate knowledge about family functioning in the ICU (Agård & Harder, 2007; Hughes, Bryan, & Robbins, 2005; Hupcey, 1998, 1999; Hupcey & Penrod, 2000; Plakas, Taket, Cant, Fouka, & Vardaki, 2014; Segaric & Hall, 2015; Vandall-Walker & Clark, 2011; Wong et al., 2015), and end-of-life experiences of family members and health care professionals (Bach et al., 2009; Bunch, 2000; Limerick, 2007; Lind et al., 2011; MacDonald et al., 2011; McAndrew & Leske, 2015; Tan & Manca, 2013). These studies contribute to depth and breadth in knowledge about families in the ICU setting; however, the majority are qualitative and descriptive, with abstract theoretical concepts that are not easily tested.

Others have applied existing theories to families in critical care, including transpersonal caring and complexity theories (Nascimento & Erdmann, 2009), crisis and systems theories (Leon & Knapp, 2008; Leske, 2000, 2003; Leske & Jiricka, 1998; Leske, McAndrew, Brasel, &

Feetham, 2017; Woolley, 1990), and Roy's adaptation model (Davidson, 2010). Simultaneous concept analysis was used to develop a model of ICU family coping (Johansson, Hildingh, Wenneberg, Fridlund, & Ahlström, 2006). Important contextual factors are lacking in these existing theoretical frameworks, specifically, the environment of care, organizational culture, and ethical conflict. Despite the valuable contributions of existing theoretical applications, there are gaps in our understanding of nursing family care in the ICU environment and how it relates to family outcomes.

Proposed Theoretical Context

A constellation of theories that incorporates families, nurses, and organizational factors is required to guide nursing family research. Family system's theory (von Bertalanffy, 1968); human ecological theory (Bronfenbrenner, 1979); stress and coping frameworks, and the Resiliency Model of Family Adjustment and Adaptation (RMFAA) (Lazarus, 1966; M. A. McCubbin & McCubbin, 1993); moral distress theory (Corley, 2002); and the healthy work environment framework (Huddleston, 2014) provide the required context. Theory analysis criteria proposed by Walker and Avant (2011) was applied to each of these theories and is presented in Table 1.

Analysis of these theories reveals a range of qualities, with some theories very testable (RMFAA, moral distress theory and the health work environment framework), while others (family systems theory and human ecological theory) are very broad and difficult to use in empirical research. Family systems theory and human ecological theory offer rich descriptions of family, a focus on the family system, and more global relevance across settings; however, there is a need for specificity to support theory testing that can only be offered by the RMFAA, moral distress theory and the healthy work environment framework. Moral distress theory

proposes relationships among variables salient to ethical conflict, and the healthy work environment framework offers a systems perspective of family outcomes influenced by organizational culture and the practice environment. The RMFAA is a well-tested and empirically supported theory; however, it does not address health care professional and health environment factors relevant to this area of study. This extensive review of five relevant theories demonstrates a single theory alone cannot guide the study of nursing family care in the ICU. Each theory offers distinctive concepts and propositions requiring further investigation within the context of this inquiry. The following section describes how a comprehensive ICU nursing family care model was created.

Establishment of INFCCM

The ICU Nursing Family Care Conceptual Model (INFCCM) incorporating elements of the presented family, nursing, and organizational theories was developed in steps. The resiliency Model of Family Adjustment and Adaptation (RMFAA) (M. A. McCubbin & McCubbin, 1993), systems, and ecological frameworks inform assumptions about family structure, process and function for the proposed conceptual model. Moral distress theory (Corley, 2002), and the healthy work environment framework (Huddleston, 2014) guide the organizational context for family within the ICU setting.

Figure 1 provides the theoretical foundation of the INFCCM. It is based on ecological theory in which the family is viewed as a microsystem nested within the mesosystem of interactions with health care professionals. The intensive care unit becomes the exosystem where family and health care professional interactions take place. The health care organization is the macrosystem that influences all other systems, serving as the guiding culture for the family experience. The RMFAA, moral distress theory, the healthy work environment framework

influence and intersect with all of the defined systems. This is illustrated in the following descriptions of each theoretical perspective.

RMFAA

A family with a critically ill family member is likely to experience a family crisis (M. A. McCubbin & McCubbin, 1993). If the family does not have enough resources or cannot acquire new resources they will remain in crisis, resulting in low family functioning and vulnerability (H. I. McCubbin & Patterson, 1983b; Patterson, 2002). Families in crisis will turn to nurses for information and support (Eggenberger & Nelms, 2007; McKiernan & McCarthy, 2010; Nelms & Eggenberger, 2010) , and the nurse's ability to provide support is influenced by the ICU environment and the overall organizational culture of care. Nurses experiencing moral distress and/or burnout may be unable to provide adequate family support and worsen a family crisis (Corley, 2002; Wiegand & Funk, 2012). Nurses and health care organizations can enhance or stifle family coping behaviors as a gatekeeper of family resources (Paul & Rattray, 2008; Suhonen, Stolt, Virtanen, & Leino-Kilpi, 2011).

Moral Distress Theory

Moral distress theory (Corley, 2002) postulates that the work environment, in combination with the psychological response of the nurse, may result in nurse moral suffering. This affects care quality if it results in patient/family avoidance and lack of advocacy. When professional nursing ethics are in conflict with those of the organization moral distress is potentiated (Mason et al., 2014; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Shorideh, Ashktorab, & Yaghmaei, 2012; Suhonen et al., 2011; Varcoe, Pauly, Storch, Newton, & Makaroff, 2012) and burnout may occur (Epp, 2012; Moss, Good, Gozal, Kleinpell, & Sessler, 2016). Organizations with inadequate structural support for nurses potentially compromise

nursing family care and family outcomes if nurses are unable to successfully support and advocate for patients and their family members (Epstein & Hurst, 2017).

Healthy Work Environment Framework

The healthy work environment framework is rooted in Laschinger's theory of structural empowerment (Huddleston, 2014; Laschinger, 2001). Employees' access to information, support, resources and power are determined by the work environment, and thereby influence nurse empowerment (Laschinger, Gilbert, Smith, & Leslie, 2010). Empowerment determines the employees' ability to carry out successful nursing care in the workplace (Huddleston, 2014; Spreitzer, 1995). Healthy environments are associated with positive patient, nurse, and organizational outcomes (Huddleston, 2014; Laschinger et al., 2010; Purdy, Laschinger, Finegan, Kerr, & Olivera, 2010). Therefore, it is implied that nursing work environments also influence family care and family outcomes.

The healthy work environment framework concepts include adaptive structures, caring processes, and patient, nurse, and organizational outcomes (Huddleston, 2014). Adaptive structures include the patient/family, employees, the work environment, health care organization and structural empowerment. This framework is based on the work of Donabedian, who defined care quality as dependent on structures, processes, and outcomes (Donabedian, 1966, 1988, 2005). Structure is the setting of care (ICU environment) and organizational characteristics (health care organization and culture of care), while process is the interactions among health care professionals, patients and their family members (Donabedian, 1988). Outcomes are changes that occur as the result of structural and process components (Donabedian, 1988; Huddleston, 2014), and influenced by all systems within the macrosystem. Structure and process both affect the health and well-being of care recipients (Donabedian, 1988; Huddleston, 2014).

Integration of Theories and Frameworks for INFCCM

The integrated IFCCM (Figure 2) provides an overview of family and nursing family care factors and outcomes. The assumptions are the family is an ecological system that uses existing resources, including problem solving and coping skills, and support mechanisms to adapt to a crisis (Broderick, 1993; Bronfenbrenner, 1979, 2005; M. A. McCubbin & McCubbin, 1993; von Bertalanffy, 1968). This model is a linear depiction of the theoretical underpinnings described, and relationships proposed are supported by empirical evidence. Relationships with strong empirical support are illustrated with solid lines, while those supported primarily by theory are depicted with dotted lines.

The RMFAA provides the general family context with the first part of the model, in which accumulating stressors (critically ill family member, existing family strains, and medical decision making) may lead to the experience of a family crisis. The family will make decisions about the care of their critically ill family member, and how the family functions during that time is dependent on family factors (resources, coping, and problem solving), as well as the quality of nursing family care. The level of support provided by nurses (quality of nursing family care) is determined by the ICU climate of care (ethical conflict, organizational resources, nurse burnout). Subsequently, there are family outcomes associated with the ICU family experience (psychosocial, well-being, adaptation, and resilience or vulnerability) that are influenced by family factors and the quality of nursing family care.

Notably, the quality of nursing family care and ICU climate of care variables are not well studied within the context of family responses as indicated by dotted lines in the model. There are solid lines from family decision making to family psychosocial outcomes given the plethora of research on end-of-life family decisions. Evidence from prior studies provide support for

relationships among accumulating stressors, family factors, family well-being and family adaptation (solid lines). However, the influence of the ICU environment and level of family support and family engagement by health care professionals remains largely unknown. There is a paucity of research related to family resiliency (dotted lines). The theoretical and empirical evidence to support the IFCCM follows.

Family Crisis

Family adjustment occurs in response to daily and unresolved family stressors. However, when a significant event occurs, such as the critically illness of a family member (expected or unexpected), the families' existing resources may become taxed and result in a crisis if the family is unable to meet the demands of the imposed stressor (M. A. McCubbin & McCubbin, 1993). In the ICU setting complex medical decisions are related to a spectrum of options that involve starting, withholding, continuing, or stopping life support medical interventions (Bach et al., 2009; Lang & Quill, 2004; Limerick, 2007; Pattison, Carr, Turnock, & Dolan, 2013; Wiegand, 2008). This is considered a family crisis, as it creates tremendous demands on the family system (M. A. McCubbin & McCubbin, 1993). It is well documented in prior research decisions about life-sustaining treatments are extremely difficult for families (Adams et al., 2014; Gutierrez, 2012; Lind et al., 2011, 2012; MacDonald et al., 2011; Wiegand, 2008) and the ICU experience influences family social, emotional, and physical well-being (Baumhover & May, 2013; Paul & Rattray, 2008).

Families respond to a crisis in diverse ways; however, it is their responses and behaviors that influence their outcomes (M. A. McCubbin & McCubbin, 1993). Every family enters into the ICU experience with pre-existing family factors that influence family responses to the crisis (M. A. McCubbin & McCubbin, 1993). These family factors include problem solving, coping

skills, and resources. Family communication (problem solving and coping skills), and existing resources (education, health, emotional support, family cohesiveness) are used by the family to manage the crisis situation (H. I. McCubbin, Comeau, & Harkins, 1981).

Problem solving allows the family to break apart the components of stressors and develop ways to overcome challenges (M. A. McCubbin & McCubbin, 1993). Family behaviors aimed at protecting the well-being of the family unit facilitate coping (M. A. McCubbin & McCubbin, 1993). Resources are available family support structures/mechanisms that can meet the demands of a crisis (M. A. McCubbin & McCubbin, 1993). Family resources include financial means, physical and emotional health, and self-esteem, and support from individual family members, the family as a whole, and the community (H. I. McCubbin, Comeau, et al., 1981; M. A. McCubbin & McCubbin, 1993). Resources are what a family brings to the situation, and coping behaviors are what the family does to overcome problems (M. A. McCubbin & McCubbin, 1993; Patterson, 1989).

Family relationships may be strained, distant or close. Close and supportive intrafamily relationships are more likely to give families strength during the critical illness of a family member (MacDonald et al., 2011; H. I. McCubbin & McCubbin, 1988; M. A. McCubbin & McCubbin, 1993). The family also has relationships with others who are outside of the family boundary that may support family functioning (Patterson, 1989). The family's view (values, beliefs, goals, expectations and priorities) of their family system is a critical element, as it shapes their identity and provides the family with protective factors and strengths (H. I. McCubbin, Thompson, Thompson, Elver, & McCubbin, 1998; Patterson, 2002; Patterson & Garwick, 1998).

Families enter the health care experience with family characteristics that may impact their experience (M. A. McCubbin & McCubbin, 1993; Patterson, 1989). Increased family stressors,

strains and transitions were related to decreased resources and problem solving communication in an early ICU family study (Leske & Jiricka, 1998). Family coping strategies incorporate various internal and external family resources (Johansson et al., 2006). Some have reported levels of coping differ based on the patient's diagnosis, with families of gunshot patients reporting significantly fewer coping strategies than those of motor vehicle crashes or coronary artery bypass grafting (Leske, 2000, 2003). However, others have reported no differences (Chui & Chan, 2007).

Quality of Nursing Family Care

Nurse-family relationships, the ICU work environment, and the health care organization also influence nursing family care (Dinç & Gastmans, 2013; Huddleston, 2014; Suhonen et al., 2011). Nurses are in a position that requires close, continuous contact with families in the ICU (Peter & Liaschenko, 2004), and thereby influence the degree to which family needs are met (Al-Mutair, Plummer, Brien, & Clerehan, 2013; Leske, 1986, 1991; Molter, 1979; Paul & Rattray, 2008).

The ICU climate of nursing care influences nurse-family interactions and the quality of nursing family care. Sub-concepts include ethical conflict, organizational resources for ethical conflict, and nurse burnout. Disagreements about patient care that are attributed to ethical principles, values, or beliefs that may lead to an experience of distress if barriers exist that prevent moral action (Jameton, 1984; Pavlish, Brown-Saltzman, So, Heers, & Iorillo, 2015). Ethical conflict is conceptualized as a precursor to a spectrum of moral responses, including moral indifference, moral well-being, moral uncertainty, moral dilemma, moral distress, and moral outrage (Falcó-Pegueroles, Lluch-Canut, & Guàrdia-Olmos, 2013; Jameton, 1984; Wilkinson, 1987). Nurse responses to ethical conflict will positively or negatively influence the

quality of family care (Corley, Minick, Elswick, & Jacobs, 2005; Huddleston, 2014). The nurse may experience moral well-being when advocating for a family and assisting the family in acquiring new resources. In contrast, nurse moral indifference, uncertainty, dilemma, distress, or outrage have the potential to compromise family care if these moral states result in avoidance of the family and lack of advocacy (Bridges et al., 2013; Corley, 2002; Humphries & Woods, 2016; Varcoe et al., 2012; Wiegand & Funk, 2012).

Organizational resources for ethical conflict, also known as the ethical climate in the literature, is the availability of resources and support for ethical issues (Olson, 1995, 1998). Organizations low in resources and support for ethical issues will negatively impact the process of family adaptation. Nurses may experience burnout as the result of increased frequency and intensity of ethical conflicts, and low levels of organizational support for ethical issues (Falcó-Pegueroles et al., 2016; Glasberg, Eriksson, & Norberg, 2007; Hamric, Borchers, & Epstein, 2012; Humphries & Woods, 2016; Moss et al., 2016; Vanderheide, Moss, & Lee, 2013). Burnout is characterized by high levels of emotional exhaustion (overextension of self) and depersonalization (distancing the self from others), and low levels of personal accomplishment (deficiency in one's capabilities) (Maslach, Schaufeli, & Leiter, 2001). Nurse burnout has the potential to lead to nurse-family disengagement that may further undermine the process of family adaptation (M. A. McCubbin & McCubbin, 1993).

The health care organization creates the environmental and social context for nurse-family interactions, as well as the culture and normative structure to guide moral behavior (Olson, 1998; Victor & Cullen, 1988). A negative relationship between moral distress and the organizational ethical climate has been established in prior research (Hamric et al., 2012; Pauly, Varcoe, Storch, & Newton, 2009; Silén, Svantesson, Kjellström, Sidenvall, & Christensson,

2011; Whitehead, Herbertson, Hamric, Epstein, & Fisher, 2015). Frequent and severe ethical conflict (Azoulay et al., 2009; Meth et al., 2009; Studdert et al., 2003) and moderate to high levels of burnout (Poncet et al., 2007; Profit et al., 2014) are common among ICU nurses. Moral distress and burnout are responses to ethical conflict (Falcó-Pegueroles et al., 2013) that have the potential to negatively impact family care (Corley, 2002; De Villers & DeVon, 2013; Meltzer & Huckabay, 2004; Wiegand & Funk, 2012) if they lead to nurse disengagement from patients and families (Aghabarary & Nayeri, 2016; Meltzer & Huckabay, 2004; Rushton, Batcheller, Schroeder, & Donohue, 2015; Varcoe et al., 2012).

The quality of nursing family care is the degree to which family needs are met and the family is engaged by nurses in the care of their family member (Segaric & Hall, 2015). Sub-concepts include the delivery of family-centered care (FCC) and nurse provided family support. Family-centered care (FCC) is a philosophy in which partnerships are formed with the patient, family, and health care professionals within a health care institution (Davidson et al., 2017; Institute for Patient-and Family-Centered Care, 2010). Elements include respect, information sharing, participation, and collaboration (Davidson et al., 2017). Nurse provided family support occurs when the nurse provides: 1) reassurance, 2) emotional support, 3) decision-making support, 4) acknowledgement of the family's contributions to care, and 5) devotes time to family care and 6) encourages family participation in care (Astedt-Kurki, Tarkka, Rikala, Lehti, & Paavilainen, 2009; Eggenberger & Nelms, 2007; Leske, 1986; Nelms & Eggenberger, 2010).

Nursing practices that incorporate family-centered care (FCC) include family involvement in rounds, family presence during invasive procedures or resuscitation, and family participation in routine care (Al-Mutair et al., 2013; Davidson, 2009; Mitchell, Chaboyer, Burmeister, & Foster, 2009; Mitchell et al., 2016). Families who participated in the care of their

family member reported significantly higher reports of FCC than those who did not participate (Mitchell et al., 2009). Leske (2017) found that family members who witnessed the resuscitation of their injured family member experienced less anxiety and stress, and had higher scores for family well-being. Thus, the level of involvement of family members in patient care may influence family outcomes.

Nurse provided family support occurs as the result of positive nurse-family interactions, in which family members feel accepted and valued by the nurse, receive assistance with their basic needs, and perceive nurse empathy and compassion (Adams et al., 2014; Åstedt-Kurki et al., 2009; Roscigno, 2016; Segaric & Hall, 2015). Families utilize nurses and health care organizations as a potential social support resources (Adams et al., 2014; Karlsson, Forsberg, & Bergbom, 2010; Lind et al., 2012; M. A. McCubbin & McCubbin, 1993). A weak correlational relationship was found between nursing family support and family reported health in a pediatric ICU (Hakio, Rantanen, Åstedt-Kurki, & Suominen, 2015). This was the only study to specifically measure the relationship between nurse provided family support and a family outcome.

Family Outcomes

Although some have found no relationship between the severity of patient illness and family outcomes (Leske, 2000, 2003; Leske & Jiricka, 1998), the theoretical underpinnings of the RMFAA support that a family member closer to death may be perceived as a greater stressor than a family member who's risk of death is low (M. A. McCubbin & McCubbin, 1993). Family members of patients who are at high risk of dying and report high stress levels are at an increased risk for adverse psychological outcomes (Davidson, Jones, & Bienvenu, 2012). Increased ICU length of stay is associated with higher levels of family stress (Chui & Chan, 2007).

Families experience moderate to high levels of distress when their family member is in the ICU (Agård & Harder, 2007; Anderson, Arnold, Angus, & Bryce, 2008, 2009; Baumhover & May, 2013; Day, Haj-Bakri, Lubchansky, & Mehta, 2013; Eggenberger & Nelms, 2007; McAdam, Dracup, White, Fontaine, & Puntillo, 2010; McAdam, Fontaine, White, Dracup, & Puntillo, 2012; Turner-Cobb, Smith, Ramchandani, Begen, & Padkin, 2016), and report adverse psychological, emotional, and physical symptoms (Baumhover & May, 2013; Davis et al., 2005; Eggenberger & Nelms, 2007; Johansson et al., 2006; Kentish-Barnes, Lemiale, Chaize, Pochard, & Azoulay, 2009; Olding et al., 2016; Paul & Rattray, 2008). Family vulnerability in the ICU environment is well-documented (Baumhover & May, 2013; Eggenberger & Nelms, 2007; McAdam et al., 2010; Söderström, Saveman, Hagberg, & Benzein, 2009).

Family well-being is a measure of the family's social, emotional, and physical health (H. I. McCubbin & Patterson, 1983a). Family well-being has been used as an outcome measure in multiple studies (Leske, 2000, 2003; Leske & Brasel, 2010; Leske & Jiricka, 1998; Leske et al., 2017). Family adaptation and family and patient well-being have a positive relationship (Leske & Jiricka, 1998; McLain & Dashiff, 2008). Family system resources influenced adaptation in early studies (Lavee, McCubbin, & Patterson, 1985; Leske & Jiricka, 1998). Families with greater coherence are more likely to experience adaptation (Agård & Harder, 2007; Antonovsky & Sourani, 1988; Eggenberger & Nelms, 2007; MacDonald et al., 2011; Söderström et al., 2009).

The family may experience resiliency (high level of functioning) or the family may experience vulnerability (low functioning) (Baumhover & May, 2013; Black & Lobo, 2008; M. A. McCubbin & McCubbin, 1993; Patterson, 2002) due to family, nurse and health care organization factors (Segaric & Hall, 2015; Vandall-Walker & Clark, 2011). Some families may overcome the crisis easily, while others may experience significant problems keeping their

family together (M. A. McCubbin & McCubbin, 1993; Söderström et al., 2009). Family resiliency factors documented in the literature include optimism, spirituality, cohesion, flexibility, communication, and flexibility (Black & Lobo, 2008).

Families with greater education have reported higher levels of family health and well-being (Hakio et al., 2015). Family members who scored highly for the attribute of resilience had fewer adverse psychological outcomes (Nadig, Huff, Cox, & Ford, 2016). Family problem solving is a determinant of family adaptation (Leske & Jiricka, 1998). Family members who were able to witness the resuscitation of their critically ill family member (a family-centered intervention) experienced reduced anxiety, stress, and increased well-being, and family resources were found to moderate the stress response (Leske et al., 2017).

Nursing family care is enhanced when the family has many existing resources and problem-solving skills, and nurses are practicing in a setting with strong unit and organizational support for nurses and families. In contrast, when families have few resources and coping mechanisms, and nurses have little support for the resolution of conflicts in clinical practice, nursing family care may be compromised. Family factors, the ICU climate of care and the resultant quality of nursing family care influence family psychosocial outcomes, well-being, adaptation, resiliency and vulnerability during and after a family member's critically illness (Corley, 2002; Dinç & Gastmans, 2013; Huddleston, 2014; Lavee et al., 1985; Leske, 2000, 2003; Leske & Jiricka, 1998; Leske et al., 2017; Patterson, 2002).

Directions for Future Family Research in the ICU

The majority of family research related to the ICU setting has explored negative psychological symptoms (Anderson et al., 2008, 2009; Baumhover & May, 2013; Day et al., 2013; McAdam et al., 2010; McAdam et al., 2012; Turner-Cobb et al., 2016). There is a paucity

of literature measuring family adaptation, well-being and resilience indicates the need for further study of positive family states (Black & Lobo, 2008; Feetham & Deatrick, 2002; M. A. McCubbin & McCubbin, 1993; Patterson, 2002; Söderström et al., 2009). Determination of what makes some families stronger and others more vulnerable can direct the development of family interventions in a more meaningful way (Feetham & Deatrick, 2002; Patterson, 2002). Nurses play a critical role in supportive family care in the ICU. There is a need to measure the extent and degree to which nursing family care within health care organizations influences family outcomes during and after an ICU admission.

Despite the importance of nursing family care, research evidence indicates that family support is inadequate in the ICU (Eggenberger & Nelms, 2007; Nelms & Eggenberger, 2010; Olding et al., 2016; Segaric & Hall, 2015; Wong et al., 2015). Descriptive research has highlighted the importance of the nurse-family relationship and the facilitators and barriers to high quality family care (Cypress, 2010, 2011, 2015; Eggenberger & Nelms, 2007; Hetland, Hickman, McAndrew, & Daly, 2017; Hupcey, 1998; Lind et al., 2012; Nelms & Eggenberger, 2010; Segaric & Hall, 2015; Vandall-Walker & Clark, 2011). There is a documented need for continued inquiry into this area of nursing science. Interventional research requires further development and testing, and the INFCCM may guide the selection of variables in future studies.

Research of families in the ICU must focus on the factors that influence family care at the nursing unit and organizational levels. Further exploration of family resiliency, adaptation, and well-being in ICU family members is needed to operationalize these concepts. Instrument development and testing is required in future research to measure the effects of family related factors and nursing family care on specific family outcomes, and determine interventions at the family, nurse, and organizational levels that support positive family outcomes. Testing

components of the INFCCM conceptual model in future research will build knowledge about these gaps in the science, and provide direction for interventions that support high quality nursing family care.

Conclusion

The INFCCM adds to family science by examining how the climate of nursing care may relate to family outcomes in the ICU. This is a vital area of inquiry, as few studies have addressed how systems of care influence families. Further theoretical development and empirical testing of the INFCCM is required to inform nursing practice and health care policy. Families must be collaborative partners within the health care system. Increasing our understanding of family level outcomes influenced by nursing family care will provide a stronger foundation for the delivery of high quality nursing family care in the ICU setting.

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Tables

Table 1

Comparison of applicable theories for families experiencing the critical illness of a family member.

	Family Systems Theory	Human Ecological Theory	Stress and Coping Frameworks and RMFAA	Moral Distress Theory	Healthy Work Environment Framework
Origin	<p>* From general systems theory developed by Ludwig von Bertalanffy, who defined a system as interacting parts that respond to environments through ongoing feedback (von Bertalanffy, 1968).</p> <p>* Family can only be understood as a whole, and the family system is uniquely different from its individual parts (Harmon Hanson & Kaakinen, 2005).</p> <p>* Family system theories were developed to address the complexity of family functioning.</p>	<p>* Extension of systems theory and incorporates developmental family perspectives (Mercer, 1989; White, Klein, & Martin, 2015).</p> <p>* Derived from the work of Urie Bronfenbrenner (Bronfenbrenner, 1979, 2005).</p> <p>* Emphasis is human adaptation and reciprocal family and family-environmental processes (Mercer, 1989).</p>	<p>* Stress and coping frameworks merge family systems, ecological and developmental orientations to family to guide interpretation of how families experience and cope with stressors in family life (Boss, 1988, 2002; Price, Price, & McKenry, 2010).</p> <p>* Richard Lazarus played a pivotal role in the development of stress and coping research. He posited that stress and coping influence adaptation outcomes (Lazarus, 1966; Lazarus & Folkman, 1984).</p> <p>* The Resiliency Model of Family Adjustment and Adaptation (RMFAA) (M. A. McCubbin & McCubbin, 1993) originated from the work of Reuben Hill (Hill, 1949, 1958), who focused on the separation of families during World War II. This theory builds upon stress and coping frameworks and is considered an integrated family social systems theory</p>	<p>* Moral distress theory (Corley, 2002) was developed primarily inductively, using research findings to formulate concepts related to moral distress. There also was a deductive component, as the theory was based on prior conceptualizations of moral distress (Jameton, 1984; Wilkinson, 1987).</p> <p>* Corley's goal was to develop a research agenda for systematic study of moral distress in nursing practice.</p>	<p>* Huddleston (2014) developed this framework from the American Association of Critical-Care Nurses six standards for establishing a healthy work environment (American Association of Critical-Care Nurses, 2016): skilled communication, true collaboration, effective decision-making, appropriate staffing, meaningful recognition, and authentic leadership, the work of Donabedian (1966) on organizational structure, processes and outcomes, as well as the theory of structural empowerment (Laschinger, 2001).</p> <p>* Was developed from practice and existing theories to guide research related to nursing care quality.</p>

	Family Systems Theory	Human Ecological Theory	Stress and Coping Frameworks and RMFAA	Moral Distress Theory	Healthy Work Environment Framework
			(Mercer, 1989; Price et al., 2010; White et al., 2015).		
Meaning	<ul style="list-style-type: none"> * A family system is comprised of individuals who are interdependent and interactive, and work to create stability (Harmon Hanson & Kaakinen, 2005). * A change in one family member affects all other members (Gladding, 2015). * Family systems have boundaries to protect the family system, and the family constantly adjusts to strains coming from within the family and outside of the family (Harmon Hanson & Kaakinen, 2005; White et al., 2015). * This theory has wide boundaries and is applicable to many cases. 	<ul style="list-style-type: none"> * Assumptions are that people are social and biological, and dependent on their environment and other human beings (Bronfenbrenner, 2005). * When viewing the family from the ecological lens observations must be contextualized by the larger environments that affect the family (Mercer, 1989). * People interact with their environments to shape individuals, groups, and communities (Smith & Hamon, 2012). * The family is part of a nested ecosystem that supports the growth and development of its members (Bronfenbrenner, 1979). * This theory has wide boundaries, as it is applicable to many different family situations. It is circular rather than linear relative to proposed 	<ul style="list-style-type: none"> * Psychological, social and physical health are related to how one discerns the stressors associated with life, and what one does to address those events (Lazarus & Folkman, 1984). * Appraisal is a critical determinant in stress theories. It is the process in which the person first determines the relevance of the event, defines potential solutions to posed problems, and applies this knowledge to redefine the event with potential resources in mind (Lazarus & Folkman, 1984). * Within the context of these theories stress induces a response; however, it does not have to be negative (Price et al., 2010). * A crisis, sometimes synonymous with the term stressor in the literature can lead to internal strengths and provide the medium for growth and development (Lazarus & Folkman, 1984). * Families respond in diverse ways to an imposed crisis. Some may thrive and others struggle through the course of the experience (M. 	<ul style="list-style-type: none"> * Moral distress is defined as an inability, or feeling unable to follow through with a moral decision due to institutional constraints (Corley, 2002). * Concepts within moral distress theory are derived from the literature (i.e. moral comfort, moral judgment moral integrity, moral conflict). * A model supports propositions of the theory and includes 28 relational statements. Relationships within the model are described as “complex and interactive” however, descriptions imply linearity, as various factors are described as increasing or decreasing moral distress. * This theory was written to incorporate all areas of nursing practice. Although the complexity of moral distress and the large number of cases that could be applied to this theory would align with wide boundaries, the specificity of the moral distress phenomenon and testable propositions supports middle-range theory. 	<ul style="list-style-type: none"> * A healthy work environment is one in which organizational policies, procedures, and systems support organizational goals, as well as employee satisfaction, and promote positive patient and nurse outcomes (American Association of Critical-Care Nurses, 2016; Disch, 2001; Shirey, 2006). * The assumption of this framework is that patient, nurse, and organizational outcomes are all rooted in structures and processes of the organization (Donabedian, 1966, 1988, 1996, 2005). * Although this theory does have propositions, they are broad. The framework specifies directional relationships, such that hospital structures and the environment of care influence patient, nurse and organizational outcomes. Thus, this framework could be tested in nursing research justifying categorization as a middle-range theory.

	Family Systems Theory	Human Ecological Theory	Stress and Coping Frameworks and RMFAA	Moral Distress Theory	Healthy Work Environment Framework
		relationships in this theory.	A. McCubbin & McCubbin, 1993). * The Resiliency Model of Family Adjustment and Adaptation (RMFAA) is the stress and coping theory of interest. It meets criteria for a middle range theory, and includes a graphic model with relational statements. This theory has strong empirical support.		
Logical adequacy	<p>* Family systems theory provides context for how families work; however, it does not offer true propositions for theory testing.</p> <p>* It serves as a guide to understanding family functioning, and is frequently used by family therapists. It does not explicate specific family outcomes.</p>	<p>* The focus of ecological theory is relationship based-such as relationships within the family, between the family and the environment, and the interaction between individuals within a family and the family system (Gilliss, 1989).</p> <p>* It does not allow for prediction; rather the proposed relationships can only be substantiated with observation.</p>	<p>* In the RMFAA (M. A. McCubbin & McCubbin, 1993), predictions are easily made from the theory and scientists agree on the majority of the predictions.</p>	<p>* Moral distress theory is the most comprehensive model of moral distress as a phenomenon in the literature.</p> <p>* It is predictive, supporting hypothesis generation. The wide use and reference to this theory supports agreement among scientists.</p> <p>* Moral distress theory comprehensively explains the phenomenon for the purposes of science.</p>	<p>* This is a very new theory; however, there is empirical support for the work environment and patient and nurse outcomes (Cho, Chin, Kim, & Hong, 2016; Kelly, Kutney-Lee, Lake, & Aiken, 2013; Kutney-Lee et al., 2015; Lake et al., 2016).</p> <p>* Future research is required to determine the accuracy of the framework's predictions.</p>
Usefulness	<p>* This theory is not helpful for predicting outcomes; however, it does offer a general philosophical orientation to family nursing research.</p>	<p>* This theory provides emphasis on both the family and the environment, allowing for consideration of factors beyond the family system.</p>	<p>* This theory is frequently used and referenced in the family literature, and has been applied to critical care family research.</p>	<p>* This is the only moral distress theory with clear directional statements to guide research.</p> <p>* Has generated a large body of evidence for nursing science (Burston & Tuckett, 2013; Huffman & Rittenmeyer, 2012;</p>	<p>* This theory is too new to determine usefulness in research; however, conceptually, the framework supports findings from prior research in this area.</p> <p>* This framework focuses on organizational and work</p>

	Family Systems Theory	Human Ecological Theory	Stress and Coping Frameworks and RMFAA	Moral Distress Theory	Healthy Work Environment Framework
		<p>* It provides a useful context for family systems research; however, it does not explicate directional propositions that are required for prediction and control.</p>		<p>Lamiani, Borghi, & Argentero, 2015; McCarthy & Gastmans, 2015; Musto, Rodney, & Vanderheide, 2015; Oh & Gastmans, 2015; Vanderheide et al., 2013) and led to a tool that has been used to measure moral distress in the literature (Corley, 1995; Corley, Elswick, Gorman, & Clor, 2001; Hamric et al., 2012).</p> <p>* Moral distress is prevalent in all areas of nursing practice (Burston & Tuckett, 2013; Oh & Gastmans, 2015), and moral distress theory has implications for nursing practice, administration, education, policy, and future research.</p> <p>* Although aspects of the theory have not been adequately tested or explored, the content of this theory is salient and vital to future moral distress research.</p>	<p>environment factors that influence the outcomes at the patient, nurse and organizational levels.</p> <p>* Given the lack of research specific to moral distress/ethical conflict and patient/family outcomes, this model holds promise in exploration of how the health care environment may affect family outcomes.</p>
Generality	<p>* Given that family systems theory is easily applied to any family situation, it is very generalizable.</p> <p>* It is difficult to test, so much of family research is based on principles of family systems theory rather than having the theory guide the design</p>	<p>* Ecological theory is easily applied to families in many different circumstances; however, it is not easily testable.</p> <p>* Similar to systems theory, it provides a guide for the development of family research rather than an explicit theory to test.</p>	<p>* This theory is applicable to families experiencing various expected and unexpected life events.</p> <p>* It is moderately generalizable; however, much of the research using this theory has been conducted by those who study human ecology and sociology.</p>	<p>* Currently there is a plethora of moral distress research; however, research methods are an important consideration in the generalizability of moral distress theory.</p> <p>* Limitations imposed by qualitative research designs, small samples, and sampling bias affect the generality of this theory. Additionally, lack of consensus among researchers and philosophers about what</p>	<p>* Future research is needed to determine generalizability of this framework.</p> <p>* Given the depth and breadth of framework concepts, it would apply to many different contexts of nursing care in health care organizations.</p>

	Family Systems Theory	Human Ecological Theory	Stress and Coping Frameworks and RMFAA	Moral Distress Theory	Healthy Work Environment Framework
	and selection of variables.		* This theory has not been utilized extensively in nursing; however, there is a body of literature using the RMFAA in critical care family research (Leske, 2000, 2003; Leske & Brasel, 2010; Leske & Jiricka, 1998; Leske et al., 2017).	moral distress is as a concept also has impacted the adoption of this theory.	
Parsimony	* While the ideas of family systems theory are complex, it is succinct.	* Ecological theory is very complex and requires extensive explanation for the various levels within the nested ecosystem.	* The RMFAA is complex; however, with the support of a graphic model propositions are easily understood.	* Moral distress theory is complex and does not lend itself to a straightforward equation. * Given the number of relational statements in the theory, there is opportunity to reduce redundancy and conceptual overlap to produce a more succinct theory.	* This theory incorporates many concepts into a succinct model that clearly shows directional relationships within the framework.
Testability	* This is not a testable theory	* This theory is very difficult to study and test	* This is a very testable theory.	* This theory has testable propositions * The focus of theory testing has been limited with emphasis only on measurement of moral distress and nurse outcomes.	* This is a testable theory.
Contemporary versus historical context	* Family systems theories originated in the late 1960s and are still relevant today.	* Developed from systems theory in the late 1970s and remains relevant today.	* The RMFAA developed in the 1980s and early 1990s. * More contemporary than other family theories, and remains relevant today.	* This is a contemporary theory developed in 2002. * Most frequently referenced moral distress theory in the literature.	* This theory is very contemporary, as it was first published in 2014.
Specific versus global relevance	* Has global relevance, as it can be applied to most families	* Globally relevant and used in many different disciplines	* This theory has more specificity than other family theories-the focus is on a	* Although the theory offers some global relevance, actual use of moral distress theory in research has been very specific-	* This theory offers specific relevance to nursing practice. This framework addresses nurses within health care

	Family Systems Theory	Human Ecological Theory	Stress and Coping Frameworks and RMFAA	Moral Distress Theory	Healthy Work Environment Framework
			<p>specific life event for the family system.</p> <p>* Can be applied to many family situations and is relevant to families in critical care.</p>	<p>primarily focused on nurses in specialty practice areas.</p>	<p>organizations and associated outcomes.</p>
Emphasis on individual family members versus the family system	<p>* Focus is on the family system, which is the advantage of this theory</p>	<p>* Focuses on the family system, as well as how individuals interact within the family.</p>	<p>* Emphasizes the family system; however, in prior research using this model much of the data comes from individual family members rather than analyzing family as the unit of analysis.</p>	<p>* Within this theory it is proposed that nurses experiencing moral distress will compromise the quality of care to patients (implied families) through lack of advocacy and patient avoidance; however, very little research addresses this specific relationship.</p>	<p>* This model does not explicitly call out families; however, it is assumed that family outcomes are part of patient outcomes within the framework.</p>
Rationale for selection	<p>* Although family systems theory cannot be used alone to guide research, principles of this theory provide the foundation for decisions related to how family is defined and measured</p> <p>* Supports family as the unit of analysis</p>	<p>* Strengths of ecological theory are the focus on the environment, and attention to family development and adaptation (Gilliss, 1989).</p> <p>* Expands upon family systems theory to account for the critical care environment and interactions with health care professionals and family members.</p>	<p>* The RMFAA has been empirically validated extensively, and has guided my mentor's research related to family outcomes in critical care (Leske, 2000, 2003; Leske & Brasel, 2010; Leske & Jiricka, 1998; Leske et al., 2017).</p> <p>* Has been applied to families experiencing the illness of a family member.</p> <p>* Strength of this theory is the emphasis on positive family attributes (Harmon Hanson & Kaakinen, 2005), family meanings and the family system perspective.</p> <p>* Many reliable and valid tools developed in support of</p>	<p>* Frequently referenced in the literature (Hanna, 2004; Russell, 2012).</p> <p>* Only moral distress theory that offers propositions with directional statements to support theory testing.</p> <p>* Theory addresses the impact of moral distress on patients, nurses and organizations-acknowledging environment of care factors.</p>	<p>* Explicates the influence of organizational culture and the practice environment on patient (and family) outcomes.</p> <p>* Provides a systems theory lens while also offering a laser focus on the connection between nursing practice and organizational structures and processes.</p>

	Family Systems Theory	Human Ecological Theory	Stress and Coping Frameworks and RMFAA	Moral Distress Theory	Healthy Work Environment Framework
			theory concepts (H. I. McCubbin, Olson, & Larson, 1981; H. I. McCubbin & Patterson, 1983a; H. I. McCubbin, Patterson, & Wilson, 1983; M. A. McCubbin, McCubbin, & Thompson, 1988).		
Limitations	<ul style="list-style-type: none"> * At high level of abstraction * Difficult to test due to cyclical and interdependent relationships. * Aspects of the family's environment are background rather than the focus * Difficult to study more than one dimension of family at the same time (Gilliss, 1989). 	<ul style="list-style-type: none"> * Due to the emphasis on the family's natural environment, research methods in ecological theory may be dependent on observation, which introduces the Hawthorne effect and threatens external validity (Gilliss, 1989). * Difficult to test due to the lack of linearity and remains at a high level of abstraction. 	<ul style="list-style-type: none"> * Although the RMFAA is robust and well tested, it requires some modification for family nursing research. * Acknowledges environmental influences; however, they are not explicit within the model. * According to Lazarus and Folkman (1984) appraisal of a situation is dependent upon a dynamic interplay of environmental and psychological factors. Thus, the environment of care is of utmost importance within the context of family outcomes. * Provides a description of the potential influence of health care professionals and organizations, but it does not explain or represent their specific role within the family model. 	<ul style="list-style-type: none"> * Meets criteria for middle range theory; however, there are untested components with abstract concepts more likely to be found in grand theory (Meleis, 2012). * Some theoretical definitions, statements, and relationships are problematic due to lack of consistency or vague descriptions. 	<ul style="list-style-type: none"> * Generally, this framework provides a holistic picture of how organizational structure and processes affect patient, nurse and organizational outcomes; however, it is very new and has not undergone empirical testing. * Propositions are broad and may not be amenable to rigorous hypothesis testing.

Figures

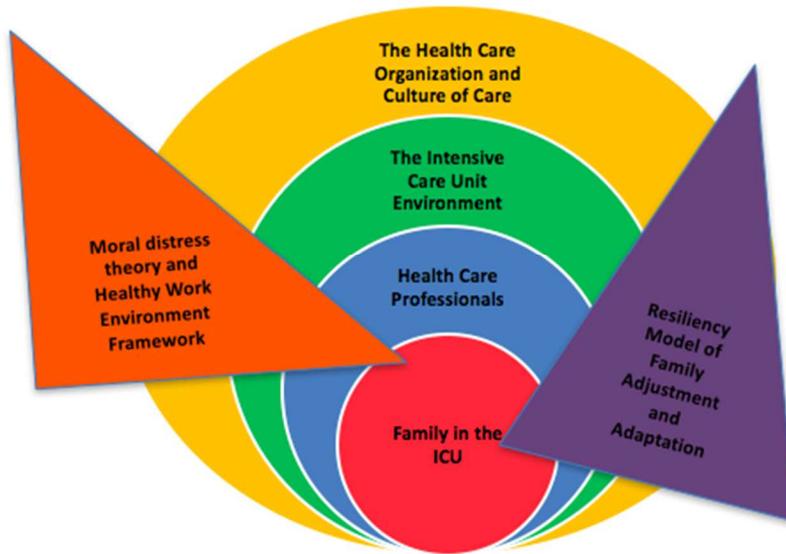


Figure 1. General theoretical foundation for conceptual model development.

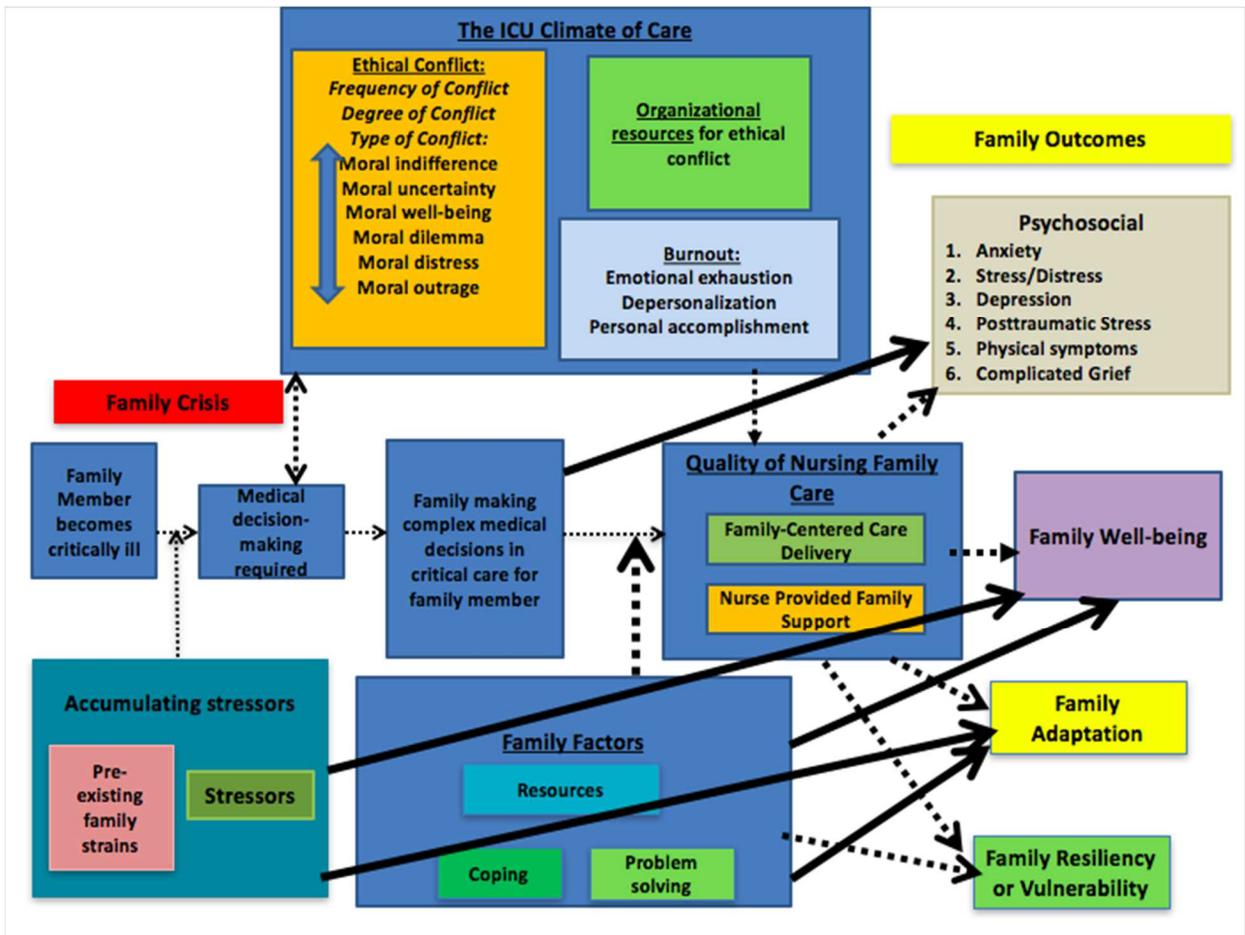


Figure 2. Depiction of INFCCM

Chapter Summary

In this chapter, the conceptual foundations for proposed study and the guiding research questions were presented. Theoretical and empirical evidence supports investigation into the relationship between the ICU climate of care, the quality of nursing family care, and family well-being. The variables under investigation for the ICU climate of care include: 1) ethical conflict, 2) nurse burnout, and 3) nurse perception of organizational resources for ethical conflict. The variables for the quality of nurse family care include: 1) the family's perception of family-centered care, and 2) nurse provided family support. The family outcome of interest is family members' social, emotional, and physical well-being. The current study fills an important gap in the science addressing how the ICU climate of care variables may relate to the quality of nursing family care, as well as a family outcome in the ICU. The knowledge gained about the climate of care and the quality of nursing family care may guide the development and use of measures in future studies, and highlight areas of nursing practice and family care amenable to intervention in the ICU setting. An in-depth review of literature pertinent to the proposed study is presented next in Chapter II.

CHAPTER II

LITERATURE REVIEW

In this chapter, literature related to the proposed research questions is reviewed. It is organized by concepts within the study's guiding conceptual model. Family focused literature is presented first, including studies relevant to family well-being, family-centered care (FCC), and nurse provided family support. A critical appraisal of this body of literature is provided. Literature related to the ICU climate of care is presented next, with studies pertaining to ethical conflict, moral distress, burnout, and organizational resources for ethical conflict. Critique of the literature follows this section. A state of the science manuscript that was published in *Nursing Ethics* is included in the section on moral distress. This chapter concludes with a discussion of the gaps in this area of science, and the relevance of the dissertation study.

Search Strategy

A systematic search of the literature from 1998 to 2016 was completed in collaboration with health sciences librarians for all study concepts. Ovid MEDLINE, CINAHL, and Scopus databases were used to identify articles for review. Figure 2 provides the general search terms entered into the databases. The search was limited to research articles in the English language, and editorials and dissertations were excluded. Although the adult critical care population was a primary focus, some pediatric literature ($n = 12$) was included because of specificity to the research questions in the domains of family well-being ($n = 4$) and FCC ($n = 8$). Only research, review studies, and grey literature were included in the final selection of articles. Articles were included in the review if they addressed one or more of the study concepts (ethical conflict, burnout, organizational resources for conflict, FCC, nurse provided family support, or family well-being). A systematic review of the moral distress literature from 2009 to 2015 has already

been published by the author (McAndrew, Leske, & Schroeter, 2016); therefore, moral distress literature was limited to late 2015 to 2016 in the final selection of articles. In the gray literature, one article from 1997, and two articles from 2017 pertaining to the concepts of nurse provided family support, family well-being and FCC were also included in the final selection of articles.

***All searches were limited to include intensive care units, intensive care, ICU, critical care or critical illness and nurses, nurses roles, nursing assessment, nursing care, nursing process, critical care nursing, nursing staff, nursing services**

Family social, emotional, and physical health: family health, family relations, family well-being, health promotion, family adaptation, quality of life, psychological stress, personal satisfaction

Family-centered care: family nursing, family center, professional family relations, family health, family care, patient care team, continuity of patient care, patient-centered care, family, or families

Nurse provided family social support: support, social support, family, families, patient advocacy, professional-family relations

Ethical conflict and moral distress: nurses, ethics, medical, nursing, ethic, bioethics, code of ethics, conscience, attitude of health personnel, conflict, conflict of interest, dilemma, disagreement, dissent and disputes, distress, stress, psychological stress, morals or moral

Burnout: professional, burnout, fatigue, compassion, mental

Organizational resources for ethical conflict: organization, institutional, ethics, hospital, health care facilities, organizational culture, organizational ethical climate

Figure 2. Search strategy for literature review.

Overall search results yielded a total of 5,582 articles. After removing 1,260 duplicates, 4,388 titles were screened for inclusion. A total of 194 articles were included in the final review. The flow diagram below (Figure 3) shows the step by step process for the literature selection. Table 1 provides the number of articles included for each concept, and the quantity of qualitative and quantitative studies. The next section describes the results of the literature review.

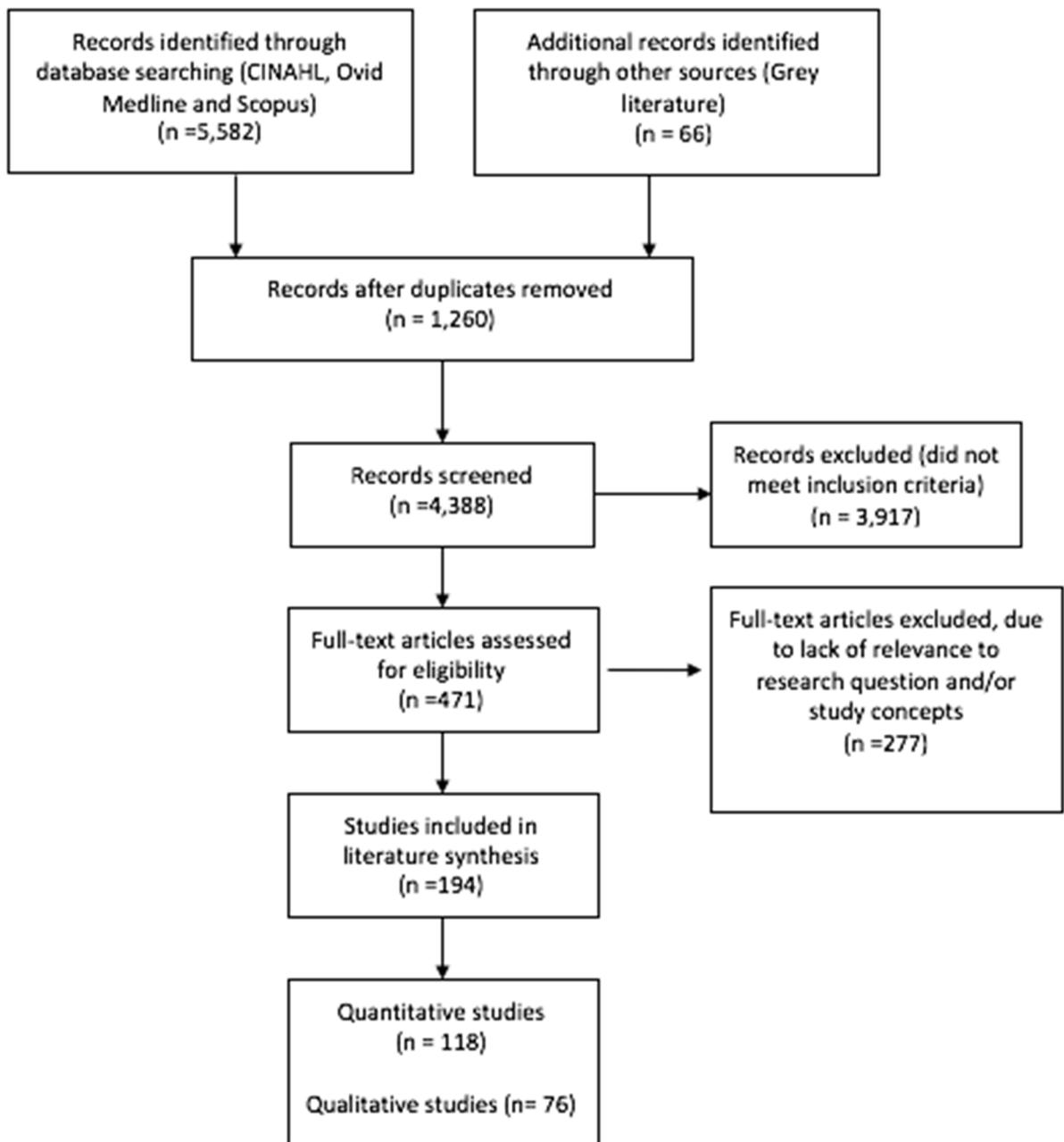


Figure 3. PRISMA flow diagram for studies selected for inclusion.

Table 1

Literature review results organized by concept and the number of qualitative and quantitative studies.

	Ethical Conflict	Moral Distress	Organizational Resources	Burnout	Family-Centered Care	Nurse provided Family Support	Family Well-being	Total
Ovid Medline	Hits:423 Duplicates: 51	Hits: 194 Duplicates:11	Hits: 324 Duplicates: 26	Hits: 214 Duplicates: 14	Hits: 429 Duplicates: 51	Hits: 321 Duplicates: 40	Hits: 336 Duplicates: 43	
CINAHL	Hits: 438 Duplicates: 112	Hits: 151 Duplicates: 65	Hits: 269 Duplicates: 59	Hits: 136 Duplicates: 78	Hits: 437 Duplicates: 123	Hits: 117 Duplicates: 11	Hits: 55 Duplicates: 23	
Scopus	Hits: 111 Duplicates: 36	Hits: 109 Duplicates: 50	Hits: 166 Duplicates: 62	Hits: 241 Duplicates: 143	Hits: 169 Duplicates: 80	Hits: 513 Duplicates: 110	Hits: 429 Duplicates: 72	
Total Screened for Inclusion	773	328	612	356	781	790	682	4,322
		*Excluded any literature prior to late 2015 to current literature						
Number of full text articles screened for inclusion	30	5	55	120	127	93	23	
Number or articles included for review	16	2	13	22	32	29	16	
Additional Grey literature	11	3	13	9	19	5	6	65
FINAL Number of articles included in review	27 Qual: 10 Quant: 17	5 Qual: 1 Quant: 4	26 Qual:6 Quant:20	31 Qual: 4 Quant: 27	51 Qual: 24 Quant: 27	34 Qual: 27 Quant: 7	20 Qual: 4 Quant: 16	194

Note. Moral distress is shaded because a state of the science manuscript was already published that included the majority of this body of literature. Only 5 articles specifically addressing moral distress were included (published after the state of the science paper).

Results for Family Focused Literature

The following section focuses on literature that is related to the family experience in the ICU. It begins with an overview of family outcomes research pertaining to family health and well-being. The next presentation of results explores the literature focused on the delivery of FCC, followed by a review of the articles addressing nurse provided family support. A summary of this body of literature is provided followed by a critique of the science in this area of study. Evidence tables organized by concepts are found in Appendix A.

Family Well-being

The ICU experience affects the family's social, emotional and physical health (Baumhover & May, 2013; Davis et al., 2005; Eggenberger & Nelms, 2007; Johansson et al., 2006; Kentish-Barnes et al., 2009; Olding et al., 2016; Paul & Rattray, 2008). Family members report moderate to high levels of stress in the ICU (Auerbach et al., 2005; Chui & Chan, 2007; Leske et al., 2017; McAdam et al., 2010; Nadig, Huff, Cox, & Ford, 2016; Van Horn & Tesh, 2000). In one study, 46% of family participants rated a family member's ICU stay as a moderate to major life crisis (Van Horn & Tesh, 2000). The family experiences a multitude of changes during a family member's critical illness (Agård & Harder, 2007; Söderström et al., 2009).

Changes in families during the ICU experience. Family members report new responsibilities and alterations in their existing family roles when a family member is in the ICU (A. Engström & Söderberg, 2004; Hupcey & Penrod, 2000; Söderström et al., 2009; Van Horn & Tesh, 2000). Concerns about the future, financial stress, and communication with other family members, especially young children, are significant worries for families (Agård & Harder, 2007; Nadig et al., 2016; Van Horn & Tesh, 2000). Family stress increases with length of stay in the ICU (Chui & Chan, 2007; Van Horn & Tesh, 2000). Making decisions about life-sustaining

treatments for a critically ill family member is extremely difficult for families (J. Adams et al., 2014; Gutierrez, 2012; Hupcey & Penrod, 2000; Lind et al., 2011; MacDonald et al., 2011).

Family members of patients who are at high risk of dying and report high stress levels are at an increased risk for adverse psychological outcomes (Davidson, Jones, & Bienvenu, 2012).

Family members tend to neglect their own needs when a family member is critically ill and have difficulty with completion of family duties outside of the hospital, increasing strain on the family unit (Agård & Harder, 2007; Baumhover & May, 2013; A. Engström & Söderberg, 2004). Families have described a “wait and see approach” to decisions about life-sustaining treatments in the ICU, with waiting delaying family discussions and increasing distress (Lind et al., 2011). Families devote considerable amounts of energy to obtaining information, spending large quantities of time waiting to learn more about the critically ill family members’ diagnosis, prognosis, and test results (Agård & Harder, 2007; Eggenberger & Nelms, 2007; A. Engström & Söderberg, 2004; Vandall-Walker & Clark, 2011).

Family members describe a need to remain in close proximity to their critically ill family member (J. Adams et al., 2014; Eggenberger & Nelms, 2007; A. Engström & Söderberg, 2004; McKiernan & McCarthy, 2010; Nelms & Eggenberger, 2010; Vandall-Walker & Clark, 2011). From the perspective of the patient, family members are an important form of support, providing a sense of help, safety and comfort, and critically ill patients have expressed they want their family members with them (Olsen, Dysvik, & Hansen, 2009). When family visits are limited or delayed the family struggles to adapt to the situation (Söderström et al., 2009).

Family coping and family outcomes. Some family members may cope with the ICU experience by suppressing their thoughts and emotions (Agård & Harder, 2007; Eggenberger & Nelms, 2007; A. Engström & Söderberg, 2004; Söderström et al., 2009). In one study, family

members who had difficulty sharing their feelings experienced loneliness and isolation, which further challenged family functioning (Söderström et al., 2009). In contrast, researchers found that families who engaged in open discussions and made decisions together about treatments for their critically ill family member experienced a stronger sense of family well-being (Eggenberger & Nelms, 2007; MacDonald et al., 2011; Söderström et al., 2009). Others have found that family members who scored higher in the attribute of resiliency had lower rates of adverse psychological outcomes, and optimism was associated with lower scores for emotional distress (Nadig et al., 2016). When families acquired information about what to expect, and what might happen, family members experienced some reassurance (Agård & Harder, 2007; A. Engström & Söderberg, 2004). Maintaining hope is an important aspect of family coping in the ICU, and includes spiritual support, optimism and good relationships with caregivers (Auriemma et al., 2015; A. Engström & Söderberg, 2004; Paul & Rattray, 2008; Verhaeghe, Defloor, Van Zuuren, Duijnste, & Grypdonck, 2005; Wong et al., 2015).

Positive consequences of a family member's critical illness include family togetherness and closeness (Eggenberger & Nelms, 2007; Söderström et al., 2009; Van Horn & Tesh, 2000), strengthening of faith (Cypress, 2015), personal growth, resiliency, and change (Baumhover & May, 2013; Paul & Rattray, 2008). However, most of the reviewed literature presented negative physical symptoms and emotions experienced by families in the ICU, including: poor sleep quantity and quality, diminished appetite, low energy levels, emotional distress, and feelings of uncertainty and vulnerability (Agård & Harder, 2007; Bailey, Sabbagh, Loiselle, Boileau, & McVey, 2010; Baumhover & May, 2013; Blom et al., 2013; Eggenberger & Nelms, 2007; McAdam et al., 2010; McKiernan & McCarthy, 2010; Nadig et al., 2016; Nelms & Eggenberger,

2010; Söderström et al., 2009; Van Horn & Tesh, 2000; Wartella, Auerbach, & Ward, 2009; Weis, Zoffmann, & Egerod, 2015).

A positive correlation between family adaptation and patient (McLain & Dashiff, 2008) and family well-being (Leske & Jiricka, 1998) has been documented. Family stress and strain has been associated with decreased family well-being and adaptation, explaining 40% of the variance in family well-being, and 16% of the variance in adaptation for family members of patients who had experienced gunshot wounds or motor vehicle accidents (Leske & Jiricka, 1998). Family well-being has been reported as lower than national norms for trauma populations (Leske, 2000, 2003; Leske & Brasel, 2010; Leske & Jiricka, 1998). Others have found that family well-being is associated with prior hospitalization, with those who had ICU experience reporting higher levels of well-being than those without ICU experience (Hakio et al., 2015). The physical environment and the culture of the ICU play a role in family well-being, with accessibility to the critically ill family member a determinant in family adaptation (Agård & Maindal, 2009; Mitchell et al., 2016; Reeves et al., 2015; Vasli, Dehghan-Nayeri, Borim-Nezhad, & Vedadhir, 2015).

Differences in family stress, coping and resources have been found based on patient diagnosis and relationships, with family members of gunshot victims reporting more stress, and fewer resources and coping strategies than those of motor vehicle accidents or coronary artery bypass grafting (Leske, 2000, 2003). Parents reported significantly higher levels of stress than those of other family relationships in one study (Chui & Chan, 2007). Greater social and economic resources are associated with more adaptive coping behaviors (Nadig et al., 2016), and higher levels of educational attainment have been associated with higher ratings of family health (Hakio et al., 2015). Family resources are negatively related to increased family stressors (Leske

& Jiricka, 1998), and resources moderated family stress responses in family members who witnessed the resuscitation of their family member (Leske et al., 2017). In parents of neonates, family resources were predictive of family adjustment (Doucette & Pinelli, 2004; Pinelli, 2000). Thus, existing family factors and responses influence family outcomes in the ICU.

Family outcomes related to support from health care professionals. The relationship family members have with health care professionals may influence family health and well-being. Mothers of neonates who believed they had positive relationships with their child's provider reported higher levels of satisfaction with care and well-being than those who did not (Van Riper, 2001). In a study examining parents' family functioning, health and the social support provided by nurses for children in a pediatric ICU, a weak correlation was found between family social support provided by nurses and family health (Hakio et al., 2015). The family member's relationship to the critically ill patient may also be of importance, as spouses reported receiving more frequent nurse support in the ICU than adult children (De Jong & Beatty, 2000).

Family-Centered Care

Family-centered care (FCC) is defined by the Institute for Patient and Family Centered Care as a philosophy that assumes partnerships among health care professionals, patients and their families (Institute for Patient-and Family-Centered Care, 2010). Elements include respect, information sharing, family participation, and collaboration (Davidson et al., 2017; Davidson et al., 2007). FCC must be established through a unit and organizational culture that systematically address the family by: 1) providing high quality communication between the family and interprofessional team, 2) ensuring clinician continuity, 3) keeping family informed, 4) learning about the family, 5) conducting family meetings, and 6) practicing shared-decision making

(Davidson et al., 2017; Meert, Clark, & Eggly, 2013; Wiegand, Grant, Jooyoung, & Gergis, 2013).

Family-centered communication, support, and active listening have been associated with greater family satisfaction, positive decision-making experiences, and family well-being (Aslakson et al., 2012). Interprofessional care that incorporates a FCC approach in clinical practice includes family participation in routine patient care, family involvement in rounds, and family presence during invasive procedures or resuscitation (Al-Mutair et al., 2013; Davidson, 2009; Davidson et al., 2007; Meert et al., 2013). Families want to be involved in the care of their family member; however, policies and practices, and attitudes of health care professionals challenge family involvement in the ICU (A. Adams, Mannix, & Harrington, 2017; Agård & Lomborg, 2011; Al-Mutair et al., 2013; Al-Mutair et al., 2014; Baird, Davies, Hinds, Baggott, & Rehm, 2015; Ciufu et al., 2011; Ganz & Yoffe, 2012; Lind et al., 2012; McConnell & Moroney, 2015; Santiago, Lazar, Jiang, & Burns, 2014; Shirazi, Sharif, Rakhshan, Pishva, & Jahanpour, 2015; Zaforteza, Gastaldo, et al., 2015).

Nurse perceptions of FCC. In a study measuring the delivery of FCC from the perspective of health care professionals, those working in neonatal ICUs reported that FCC aligns with their professional role, with nurses providing high scores for items about general information and communication (Himuro, Miyagishia, Kozuka, Tsutsumi, & Mori, 2015). Nurses have reported the following barriers to involving family in the ICU: a perception that families are fragile and involvement would increase stress, concerns about feeling judged if family is continually present, and inadequate time and space to incorporate family into practice (McConnell & Moroney, 2015). Critical nursing interventions for unstable patients compete with family care and impose limits on family presence and interactions at the bedside (Ciufu et al.,

2011; Kean & Mitchell, 2014; Loghmani, Borhani, & Abbaszadeh, 2014; McConnell & Moroney, 2015). Nurses report concerns about neglecting the care needs of the patient with constant family presence at the bedside, and when incorporating family into their daily practice (Kean & Mitchell, 2014).

Frequent communication and ongoing discussions about care are fundamental components of FCC (Davidson, 2009; Davidson et al., 2007; Meert et al., 2013), and yet, nurse-family and nurse-physician misunderstandings and conflicts, as well as stress induced by long nurse working hours contribute to nurse frustration and decreased family engagement (Ellis, Gergen, Wohlgemuth, & Nolan, 2016; B. Engström et al., 2011; Loghmani et al., 2014). In an observational study in an adult ICU nurses rarely discussed code status or life-sustaining treatments with family members, even when there was poor family comprehension (Slatore et al., 2012).

Nurses often serve as an intermediary between families and physicians (A. Adams et al., 2017; Butler, Willetts, & Copnell, 2015; Wong et al., 2015; Zaforteza et al., 2005), and have shared that there are situations in which they do not actively attempt to communicate with families because they believe it is the physician's responsibility (A. Adams et al., 2017; Butler et al., 2015; Pavlish et al., 2013; Slatore et al., 2012). A tension between fully informing family members and fears about confusing family members with conflicting opinions or giving false hope, as well as a lack of training in how to relay negative information has been reported by nurses (Zaforteza et al., 2005). It is documented in some studies nurses aim to give the least amount of information to families when concerns about family comprehension and coping exist (Butler et al., 2015; Zaforteza et al., 2005).

Despite existing family clinical practice guidelines for FCC (Davidson et al., 2017; Davidson et al., 2007), the limited evidence to guide implementation of family support strategies is a barrier to adoption of family support practices in the ICU (Davidson, 2009; Davidson et al., 2017). In one study, only 28% of a sample of nurses reported performing FCC at a high level (Ganz & Yoffe, 2012). Nurses often focus more on the technical aspects of patient care than family emotional support (Chesla & Stannard, 1997; Ganz & Yoffe, 2012; Söderström et al., 2003; Wong et al., 2015). When using a researcher developed tool to measure FCC in a neonatal ICU, it was found that the lowest scoring items were related to participation in the infants' care and family emotional support (Raiskila et al., 2016). This is evidence that FCC may not be practiced at the level required to support adequately support families in the ICU.

Differences in health care professionals and families' perceptions of family needs.

Nurses, family members and providers report perceived family needs differently (Hinkle & Fitzpatrick, 2011). Many family reported needs for information about the patient's condition are unmet (Auerbach et al., 2005). Family members rated 23 of 32 components of patient information higher than clinicians, with these items relating to patient comfort, family participation, the daily plan and schedule, treatments and the patient's clinical status (M. E. Wilson et al., 2015). This finding indicates families may not always receive the information about their critically ill family member they consider salient.

Although clinicians and family members rate family well-being, family concerns and requests for additional help as important information for clinicians to know (M. E. Wilson et al., 2015), meeting psychological, social and emotional family needs is not consistent in clinical practice (Bailey et al., 2010; Carlson, Spain, Muhtadie, McDade-Montez, & Macia, 2015; Hansen, Rosenkranz, Mularski, & Leo, 2016; Omari, 2009; Raiskila et al., 2016; Verhaeghe et

al., 2005). In a study that surveyed family members from 6 different ICUs, 11 of 44 family needs were perceived as never met, and with 28 of 44 needs met inconsistently (Omari, 2009).

Family perceptions of FCC. Families have expressed that clinicians could be more supportive by providing accurate and complete information, offering professional opinions but not ‘forcing it’ on them, and viewing their critically ill family member in a more holistic way (MacDonald et al., 2011). Information must be delivered in a respectful and compassionate way, and difficult news must be shared with the family in an honest manner (Gutierrez, 2012). In a study that explored family descriptions of the ICU to develop a framework for FCC, family members of ICU survivors used different words to describe their experience in comparison to family members of patients who died (Auriemma et al., 2015). Hope was used by family members of deceased patients, while those of surviving patients used words like busy and team. This finding may indicate families of patients at end-of-life may receive more emotional support and attention from health care professionals than those of patients who recover.

When families are excluded from involvement, or visitation with the critically ill patient is limited, they experience distress, frustration and insecurity (Blom et al., 2013). Family dependency on health care professionals for interactions with their critically ill family member can increase family feelings of vulnerability (J. Adams et al., 2014; Baumhover & May, 2013; Blom et al., 2013; Eggenberger & Nelms, 2007; Karlsson et al., 2010; Nelms & Eggenberger, 2010; Plakas, Taket, Cant, Fouka, & Vardaki, 2014; Vandall-Walker & Clark, 2011; Wong et al., 2015).

Family reports of FCC. Family reports of FCC in adult ICUs vary (Mitchell et al., 2009; Wang, Feng, Wang, & Chen, 2016). Of the few studies that have measured FCC in the adult ICU family population, survey items related to collaboration, support and empowerment

scored lower than other items (Mitchell et al., 2009; Wang et al., 2016). Family reports of FCC may differ based on prior critical care experience, with those with prior ICU experience reporting greater collaboration than family members who were in the ICU for the first time (Mitchell et al., 2009).

Quantitative studies highlight the challenges in FCC delivery, with differing nursing perspectives about the value of family care (Agård & Maindal, 2009; Al-Mutair et al., 2014). Nurses have expressed reservation about involving families in aspects of ICU routines (Levin, Fisher, Cato, Zurca, & October, 2015; Santiago et al., 2014), and communication problems are frequently cited in family reports of ICU care (Carlson et al., 2015; Hansen et al., 2016). Nurses tend to underestimate family emotional needs (Verhaeghe et al., 2005), and nurse ratings of family provided emotional support were ranked lowest in family care practices (Ganz & Yoffe, 2012; Raiskila et al., 2016). A positive relationship between meeting the needs of family members and nurse empathy scores has been documented (Moghaddasian, Dizaji, & Mahmoudi, 2013), supporting the significance of empathy in nurse-family interactions (Hansen et al., 2016). Families rated family support and resources as low in multiple studies (Bailey et al., 2010; Carlson et al., 2015; Gries, Curtis, Wall, & Engelberg, 2008; J. S. Hayes, Merrill, Clukey, & Curtis, 2010; Raiskila et al., 2016). Conflicts between family and health care professionals have been associated with lower reports of family support (Gries et al., 2008).

FCC interventions. A variety of family support interventions have been tested including: 1) family presence during rounds, invasive procedures and resuscitation, 2) structured nurse-family communication, 3) family participation in routine patient care, and 4) family support coordinators (Aslakson, Curtis, & Nelson, 2014; Leske et al., 2017; Levin et al., 2015; Mitchell et al., 2009; Mitchell et al., 2016; Torke et al., 2016; Weis et al., 2015; White et al.,

2012). Family members have described decreased feelings of stress and anxiety, greater satisfaction, experience higher quality communication and collaboration, and report more involvement in patient care in studies that have tested family support interventions (Al-Mutair et al., 2013; Blom et al., 2013; Carlson et al., 2015; Leske et al., 2017; Mitchell et al., 2009; White et al., 2012). Nurses who are educated and engaged in the development and implementation of FCC report increased knowledge and positive changes in their perceptions about involving families in the ICU (Eggenberger & Sanders, 2016; Kean & Mitchell, 2014; Mitchell et al., 2009).

Nurse Provided Family Support

Nurses have been studied as a form of family support (Dinç & Gastmans, 2013; Hakio et al., 2015; Hupcey, 1998, 1999; McKiernan & McCarthy, 2010; Stayt, 2007). It is documented that families consider nurses an important source of support (McKiernan & McCarthy, 2010; Van Horn & Tesh, 2000), and describe nurses constant presence as a sense of connection to the ICU environment (Eggenberger & Nelms, 2007; Nelms & Eggenberger, 2010). Nurse provided family support includes family reassurance, sharing vital patient information, as well as encouraging family participation in care (Eggenberger & Nelms, 2007; Nelms & Eggenberger, 2010; Wong et al., 2015). Family members perceived caring nurses as empathetic, and acknowledged their efforts to overcome system based factors that disadvantaged the family (Rosignano, 2016). Supportive nursing behavior in observations of nurse-family interactions have been documented as: allowing the family to express emotions, flexibility, optimistic outlook, professionalism, and building rapport with the family (J. Adams et al., 2014). Nurses have identified a responsibility to care for patients' family members, and shared a family focus can provide a more holistic perspective about the patient (Agård & Maindal, 2009; Ellis et al., 2016; A. Engström &

Söderberg, 2007; B. Engström et al., 2011; Kean & Mitchell, 2014). Nurses and families agree trusting and supportive nurse-family relationships are a vital component of quality patient care (B. Engström et al., 2011; Hupcey, 1999; Söderström et al., 2003; Stayt, 2009). Positive nurse-family relationships increase the family's confidence in the care of their family member, and families have identified the value of family psychosocial support in family coping (Cypress, 2010, 2011). For nurses, positive relationships with families fostered professional growth and development, and satisfaction with their work (Cypress, 2010; Söderström et al., 2003; Stayt, 2009).

Nurse-family relationship and inadequate nurse provided family support. Early studies elucidated that the nurse-family relationship can be challenged in numerous ways, with a lack of nurse provided family support a potential consequence (Chesla & Stannard, 1997; Holden et al., 2002; Hupcey, 1999; Hupcey & Penrod, 2000; Söderström et al., 2003). In Chesla and Standard's (1997) study on family care in the ICU, multiple problems were identified, with nurses reporting the following practices: 1) distancing the family from the patient by restricting visitation, 2) distancing themselves from the patient and family, 3) labeling families as disruptive, pathological or irrational in situations of conflict, and 4) not taking responsibility for family care. Nurses also reported a general lack of knowledge about family assessment and intervention (Chesla & Stannard, 1997). Similarly, Hupcey (1998) found that nurses inhibited nurse-family relationships by depersonalizing the patient and family, not making eye contact, and labeling the patient or family as difficult. To protect themselves from the emotional investment of family involvement, nurses have described 'becoming hard and losing their compassion' (Söderström et al., 2003). Across studies nurses report a need to control the care environment, and the perception that the patient comes before the family (Holden et al., 2002; Hupcey, 1999;

Söderström et al., 2003). In emotionally demanding situations with family members nurses may feel ineffective and experience difficulties providing support to families (Söderström et al., 2003).

Despite the emphasis on family care in ICU research and practice, more contemporary literature reveals, as in prior studies, a theme that nurses can be unsupportive of families (A. Adams et al., 2017; Baird et al., 2015; Bridges et al., 2013; Eggenberger & Nelms, 2007; B. Engström et al., 2011; Lind et al., 2012; Nelms & Eggenberger, 2010; Reeves et al., 2015; Roscigno, 2016; Slatore et al., 2012; Stayt, 2007, 2009; Vasli et al., 2015; Weis et al., 2015; Wong et al., 2015; Zaforteza, García-Mozo, et al., 2015). Nurses struggle to balance job responsibilities, and adjust to the demands by creating physical and emotional space between themselves and family members (Bridges et al., 2013; B. Engström et al., 2011; Segaric & Hall, 2015; Stayt, 2007, 2009). Family dynamics also affect nursing care, with nurses reporting difficulty establishing relationships with families who are having problems coping (Crump, Schaffer, & Schulte, 2010). Reasons identified for limiting nursing time with families include: 1) an attitude that family is an obstacle in the care of the patient, 2) negative labels and social judgments about families, 3) nurse disagreements with physicians about the plan of care, and 4) avoidance of conflict with physicians or families (A. Adams et al., 2017; Bridges et al., 2013; A. Engström & Söderberg, 2007; B. Engström et al., 2011; Slatore et al., 2012; Söderström et al., 2003; Varcoe et al., 2012; Zaforteza, García-Mozo, et al., 2015; Zaforteza et al., 2005).

Nurses consistently express a need to maintain control over family access to the ICU environment (Baird et al., 2015; Butler et al., 2015; Segaric & Hall, 2015; Söderström et al., 2003). In an exploratory study of family care delivery in a pediatric ICU, both families and nurses identified the rules of the ICU as a central theme (Baird et al., 2015). Families struggled

to learn the rules, and found the expectations for family behavior in the ICU conflicted with meeting their own needs. Many family members expressed a fear of leaving their child because entering the locked ICU was so time consuming. The nurses in the study worked to enforce rules with family members; however, the interpretation and enforcement of rules varied across nurses, which confused parents and contributed to nurse frustration (Baird et al., 2015).

Nurses report family care is emotionally draining, and describe high levels of stress when talking to family members for extended periods of time (B. Engström et al., 2011). A lack of organizational support for nursing family care contributes to nurse disengagement with families (Bridges et al., 2013). Nursing strategies to maintain control in nurse-family relationships include focusing only on physical tasks with the patient, and using closed, leading questions or direct statements to limit communication with families (Stayt, 2009). In an observational study of nurses in three different ICUs, many nurses ignored family or had brief exchanges with family members (Zaforteza et al., 2005). Söderström et al. (2003) identified two types of interactions with families: inviting, in which nurses were confident in their role and described a responsibility to care for the family, and non-inviting interactions, in which nurses perceived themselves as the authority. Nurses who were inviting to families assured that they could stay freely at the bedside, while non-inviting nurses told families when they disturbed their work (Söderström et al., 2003).

The family view of nurses' role in family care. Families have shared a need for greater nursing support and involvement (J. Adams et al., 2014; Karlsson et al., 2010; Lind et al., 2012; Nelms & Eggenberger, 2010). Family members identify dependency on the nurse to interact with their family member, and disappointment when nurse-patient interactions do not meet their expectations (Karlsson et al., 2010; Plakas et al., 2014). In one study, families shared 'they should not have had to work as hard as they did' to develop a relationship with the nurse (Nelms

& Eggenberger, 2010, p. 472). Some family members also report a perceived lack of nursing concern for patients and families (J. Adams et al., 2014). Nurses are a point of access to the ICU, with families spending considerable time negotiating visitation and involvement in their family member's care (Vandall-Walker & Clark, 2011). Family members also described behaving well or acquiescing to nurses to avoid being labeled as 'difficult' for being too assertive (Plakas et al., 2014; Vandall-Walker & Clark, 2011). When families established good rapport with nurses there was trust and reciprocity; however, if trust was violated by nurses or family members, there were conflicts that could result in restricted visiting and regression in the relationship back to task-oriented nursing care (Plakas et al., 2014; Segaric & Hall, 2015).

Nurse behaviors such as inconsistent information, abrupt communication, or keeping a distance from the family make the family ICU experience negative (Segaric & Hall, 2015; Wong et al., 2015). Consequences of suboptimal nurse support for families include: difficulty coping, lack of confidence in care, anger, and dissatisfaction (J. Adams et al., 2014). Vague nursing communication, such as only sharing technical information that did not help families understand the overall outlook for the patient, was perceived by family members as withholding information (Lind et al., 2012; Wong et al., 2015). A lack of openness and honesty undermined trust in family relationships with nurses (J. Adams et al., 2014; Lind et al., 2012; McKiernan & McCarthy, 2010; Wong et al., 2015). From the perspective of families, nurses have varying skill sets for the provision of family support interventions (Lind et al., 2012; Roscigno, 2016). To some families, nurses were viewed as doing a job, while other families reported a deep connection with nurses and relentless family advocacy (Roscigno, 2016; Segaric & Hall, 2015; Wong et al., 2015).

Summary of Family Focused Literature

Families report that the ICU experience is stressful and affects their overall well-being (Auerbach et al., 2005; McAdam et al., 2010; Van Horn & Tesh, 2000). There is a positive relationship between family adaptation and patient (McLain & Dashiff, 2008) and family well-being (Leske & Jiricka, 1998). Families want to be involved in the care of their family member; however, policies, practices and attitudes of health care professionals hinder the delivery of comprehensive FCC in the ICU (A. Adams et al., 2017; Agård & Lomborg, 2011; Al-Mutair et al., 2014; Ciufu et al., 2011; Shirazi et al., 2015). Families have expressed a need for more involvement and support from nurses (J. Adams et al., 2014; Karlsson et al., 2010; Lind et al., 2012; Nelms & Eggenberger, 2010). The quality of nursing care provided to families varies, with unsupportive nursing family care identified in early as well as contemporary literature (Bridges et al., 2013; Chesla & Stannard, 1997; B. Engström et al., 2011; Hupcey, 1998, 1999; Nelms & Eggenberger, 2010; Roscigno, 2016; Slatore et al., 2012; Stayt, 2007, 2009). The relationship family members establish nurses may affect their health and well-being (Hakio et al., 2015; Van Riper, 2001); however, this requires further exploration.

Critique of Family Literature

The majority of the reviewed family research is descriptive, and interventional studies are limited (Mitchell et al., 2016). The samples across family studies in the ICU are generally small, ranging from 35 to 249, with most family samples consisting of 50 to 100 participants. Many of the family populations were from the United States; however, Sweden, Finland, Denmark, China, the United Kingdom, Canada, Norway, Ireland, Spain, Greece, Iran, Taiwan, Australia, Saudi Arabia, Jordan, and Israel were represented in the reviewed literature. Women family members had more representation than men. The ICU types were diverse, with many of the studies

conducted in general, medical or surgical ICUs. Although the emphasis on this review was adult critical care, pediatric ICU populations were included due to the limited amount of studies related to FCC, and represent 11 percent of the reviewed family studies.

Family well-being is an understudied concept. Only 6 of the 20 reviewed family well-being studies (30%) measured well-being. The negative psychological effects associated with the ICU experience are well documented in the literature. There were no well-being tools specifically developed for measurement in ICU family members found in this review. Well-being instruments have been adapted for use with ICU family members; however, it is notable that there are unique attributes of the ICU family experience that need to be measured, specifically aspects that may increase family closeness, togetherness and an overall sense of support. Positive attributes of the ICU experience remain largely unexplored and have yet to be quantified.

A large portion of the FCC research was qualitative, using observation and interviews to determine how FCC is practiced (Agård & Lomborg, 2011; Baird et al., 2015; Blom et al., 2013; Butler et al., 2015; Ellis et al., 2016; Loghmani et al., 2014; Reeves et al., 2015; Riley, White, Graham, & Alexandrov, 2014; Roscigno, 2016; Shirazi et al., 2015; Slatore et al., 2012; Vasli et al., 2015; Weis et al., 2015; Wong et al., 2015; Zaforteza, Gastaldo, et al., 2015). Of these studies, 33% were conducted with pediatric populations (Baird et al., 2015; Butler et al., 2015; Roscigno, 2016; Shirazi et al., 2015; Vasli et al., 2015; Weis et al., 2015). This indicates FCC research requires further development in the adult ICU practice setting.

Few studies measured the degree to which FCC was delivered (Himuro et al., 2015; Mitchell et al., 2012; Mitchell et al., 2009; Wang et al., 2016). Existing tools that measure FCC in the adult ICU have been adapted from those used in pediatrics (Mitchell et al., 2009; Shields

& Tanner, 2004). Although there is greater emphasis on FCC in neonatal and pediatric care, it is not frequently measured in this population (Himuro et al., 2015; Shields & Tanner, 2004), limiting knowledge about FCC in both adult and pediatric practice. There is opportunity for further development of tools to measure FCC from the perspective of patients, families and health care professionals.

Findings across studies indicate that FCC is in need of further development in clinical practice, with problems in the delivery of FCC related to: 1) lack of consensus about FCC among health care professionals, 2) FCC as a low priority, 3) variable communication with families, 4) poor interprofessional communication, 5) lack of congruence with organizational and unit based policies with FCC philosophy 6) ICU rules limiting FCC implementation, 7) a paternalistic approach to family involvement, 8) an environment of care not conducive to family engagement, and 9) selective family engagement among professionals (Baird et al., 2015; Butler et al., 2015; Reeves et al., 2015; Shirazi et al., 2015; Vasli et al., 2015; Weis et al., 2015; Zaforteza, Gastaldo, et al., 2015). In a review of literature examining family involvement in the ICU from 2003 to 2014, it was reported that the concept is not clearly defined, with few studies exploring the organizational and practice environment factors that influence family integration into critical care (Olding et al., 2016). Exploratory research studies indicate FCC is not adequately or consistently practiced by ICU health professionals.

Most of the nurse provided family support literature reviewed was qualitative (J. Adams et al., 2014; Blom et al., 2013; Bridges et al., 2013; Chesla & Stannard, 1997; Cypress, 2010, 2011, 2015; Eggenberger & Nelms, 2007; Ellis et al., 2016; A. Engström & Söderberg, 2007; B. Engström et al., 2011; Hupcey, 1998, 1999; Loghmani et al., 2014; Nelms & Eggenberger, 2010; Plakas et al., 2014; Roscigno, 2016; Segaric & Hall, 2015; Söderström et al., 2003; Stayt, 2007,

2009; Vandall-Walker & Clark, 2011; Wong et al., 2015; Zaforteza, García-Mozo, et al., 2015; Zaforteza et al., 2005), with only 8 quantitative studies addressing measurement of nurse-family relationships or nursing family care (Buckley & Andrews, 2011; De Jong & Beatty, 2000; El-Masri & Fox-Wasylyshyn, 2007; Hakio et al., 2015; J. S. Hayes et al., 2010; Hinkle & Fitzpatrick, 2011; Moghaddasian et al., 2013). Of the limited quantitative studies examining the nurse-family relationship, findings indicate that nurses are more likely to rate the quality of their own family care higher than colleagues, with nurse comfort with family interventions positively associated with family care practices (El-Masri & Fox-Wasylyshyn, 2007). Although nurses have reported high scores for knowledge about family needs, actually meeting family needs is not rated as highly, indicating a failure to translate family care into practice (Buckley & Andrews, 2011).

In summary, approximately half of the literature related to family care is qualitative (52%), providing depth and breadth about nursing and family experiences in the ICU; however, the paucity of tools to measure family health and well-being, FCC and nurse provided family support limits the development of interventional research. Most of the research was cross-sectional; there is a need for longitudinal studies to understand the family experience and changes in family measures over time. Across studies, only a small portion (12%) identified a family theoretical framework. The majority of the studies included only one family informant, limiting knowledge about family unit outcomes. Similarly, Mitchell et al. (2016) found in a review of FCC interventions only 33% used a theoretical framework, and most examined only one aspect of FCC (Mitchell et al., 2016). Future research should aim to measure nurse contributions to family outcomes, and investigate the influence of the ICU setting and health care organization on family care and family experiences. Positive ICU family outcomes require

further exploration. Further testing and development of tools related to family adaptation, well-being and health, FCC delivery, and nurse provided family support is necessary to advance science in this area of study. It is vital that researchers consider family outcome measures applicable to the physical and psychological benefits of high quality nursing family care.

Results for Literature Related to the ICU Climate of Care

The following section focuses on nurse and organizational variables related to patient and family care in the ICU. It begins with literature addressing ethical conflict, followed by moral distress. The moral distress state of the science manuscript follows. The next section focuses on nurses' perceptions of organizational resources for ethical conflict, and the final presentation of literature addresses burnout in nurses. A summary of this body of literature is provided followed by a critique of the science in this area of study.

Ethical Conflict

Ethical conflict is common in the ICU setting (Azoulay et al., 2009; Edwards, Thronson, & Girardin, 2012; Fassier & Azoulay, 2010; Meth et al., 2009; Park et al., 2015; Pattison, 2004; Studdert et al., 2003) and may be attributed to the advancement in life-sustaining technologies and increasing complexity of patient care (Falcó-Pegueroles et al., 2013; McAndrew & Leske, 2015). Ethical conflict occurs when clinical care is inconsistent with professional values or ethics, and may lead to moral distress and burnout (Falcó-Pegueroles et al., 2013; Jameton, 1984, 1993; Meltzer & Huckabay, 2004; Meth et al., 2009; Poncet et al., 2007; Rushton et al., 2015; Sundin-Huard & Fahy, 1999). In one of the first studies to examine the issue of conflict in the ICU, it was defined as “A dispute, disagreement, or difference of opinion related to the management of a patient in the ICU involving more than one individual and requiring some

decision or action” (Studdert et al., 2003, p. 1490). There is no standard definition of what constitutes ethical conflict in the ICU (Fassier & Azoulay, 2010).

Prevalence and types of conflict. Researchers have attempted quantify the prevalence and describe the types of conflicts that occur in critical care (Azoulay et al., 2009; Edwards, Thronson, & Dyck, 2012; Edwards, Thronson, & Girardin, 2012; Meth et al., 2009; Pavlish, Brown-Saltzman, So, et al., 2015; Studdert et al., 2003). Although conflict was only evaluated from the perspective of health care professionals in the reviewed studies (Azoulay et al., 2009; Edwards, Thronson, & Girardin, 2012; Meth et al., 2009; Park et al., 2015; Studdert et al., 2003), conflict was reported as occurring at least weekly (Azoulay et al., 2009; Edwards, Thronson, & Girardin, 2012). In the well-known CONFLICUS study (Azoulay et al., 2009), health professionals from 323 ICUs in 24 countries were surveyed, with 72% of nurse and physician respondents reporting at least one conflict in the last week worked. Similarly, Edwards, Thronson, and Girardin (2012) found that 51% of nurses surveyed reported being involved in at least one situation of conflict within the most current working week (Edwards, Thronson, & Girardin, 2012).

In a qualitative study of ethical conflict with a sample of bioethicists, nurses, social workers and hospital administrators, conflicts were identified in 96% of all the interviews (Meth et al., 2009). Nurses are likely to experience more than one ethical concern, with 98% of a nurse administrator and clinical nurse specialist sample reporting an average of four ethical concerns in each patient care event identified (Pavlish, Brown-Saltzman, So, et al., 2015), and 26% of a nursing sample reporting being involved in more than one conflict in the last week of work (Edwards, Thronson, & Girardin, 2012). A medical ICU had highest number of ethical issues identified when compared to surgical, neurological, neurosurgical, and cardiac ICUs (Park et al.,

2015). Conflicts most often occurred between the health care team and family (33% to 57%) or among the health care team (31% to 67%) (Azoulay et al., 2009; Edwards, Thronson, & Girardin, 2012; Studdert et al., 2003). The largest portion of the documented conflict in the ICU relates to decisions about life-sustaining treatments, specifically concerns about family wishes for aggressive medical care when perceived as futile or inappropriate by health care professionals (Azoulay et al., 2009; Dodek et al., 2016; Dyo, Kalowes, & Devries, 2016; Edwards, Thronson, & Dyck, 2012; Falcó-Pegueroles, Lluch-Canut, Roldan-Merino, Gobern-Tricas, & Guàrdia-Olmos, 2015; Fassier & Azoulay, 2010; Henrich et al., 2016; Karagozoglu, Yildirim, Ozden, & Çınar, 2017; Lusignani, Gianni, Re, & Buffon, 2016; Meth et al., 2009; Mobley et al., 2007; Park et al., 2015; Pavlish, Brown-Saltzman, So, et al., 2015; Studdert et al., 2003). In one study, nurses reported the most commonly occurring ethical issue in their practice was communication with family members about information related to life-sustaining treatments, prognosis and the need to withdraw treatments (Teixeira, Ribeiro, Fonseca, & Carvalho, 2014).

The role of medical futility and inappropriate care in ethical conflict. Decisions about starting, stopping, or continuing life-sustaining treatment are laden with conflicting ethical principles, legal concerns, and competing professional and personal moral values (Callahan, 2000; Cronqvist & Nyström, 2007; Jameton, 1984). Medical futility occurs when life-sustaining treatments are initiated or continued that will not contribute to patient survival or recovery, or accomplish a physiologic goal (Bosslet et al., 2015). In contrast, inappropriate care is treatment that may achieve a patient or family goal, however, ICU clinicians have an ethical rationale not to initiate or provide a specific treatment (Bosslet et al., 2015). In a sample of health care professionals, 80% believed the most common reason for the delivery of inappropriate care to patients is family members' requests for treatment despite provider recommendations, and 38%

identified at least one patient receiving inappropriate care on the day they were surveyed (Anstey et al., 2015). The provision of futile care is also perceived to be driven by family pressure for providers to start or continue treatment (Palda, Bowman, McLean, & Chapman, 2005). Both medical futility and inappropriate care are extremely distressing to nurses (Anstey et al., 2015; Dodek et al., 2016; Dyo et al., 2016; Edwards, Thronson, & Dyck, 2012; Edwards, Thronson, & Girardin, 2012; Henrich et al., 2016; Karagozoglu et al., 2017; Lusignani et al., 2016; Mobley et al., 2007; Salem, 2015). Many nurses do not believe they can influence these patient care situations, with 73% of a nurse sample indicating they could not do anything to resolve conflicts (Anstey et al., 2015).

Nurses and physicians differ in their perceptions of the frequency of inappropriate and futile care (Neville et al., 2015; Palda et al., 2005; Piers et al., 2014), with nurses reporting more inappropriate care (Palda et al., 2005; Piers et al., 2014). Nurses' input about patient care concerns may not be heard in health care cultures that prioritize medical values over those of nursing (Attia, Abd-Elaziz, & Kandeel, 2013; Henrich et al., 2016; Paradis et al., 2014; Pavlish, Brown-Saltzman, So, et al., 2015; Studdert et al., 2003). Nurses have reported dissatisfaction with communication and decision making related to life-sustaining treatments in the ICU (Jox et al., 2010). Nurses experience conflict with physicians when communication of negative prognostic information to patient's family members is avoided or delayed (Attia et al., 2013; Gutierrez, 2013; Henrich et al., 2016; Pavlish, Brown-Saltzman, So, et al., 2015), or misinformation is provided (Meth et al., 2009). Lack of nurse-physician collaboration is associated with a greater odds of perceiving treatment as inappropriate (Anstey et al., 2015). Nurses have reported a general lack of support in situations of conflict (Edwards, Thronson, & Dyck, 2012; Henrich et al., 2016), and feeling 'isolated', 'torn', 'caught in the middle' between

families and the health care team, or between the patient and the family (Edwards, Thronson, & Girardin, 2012). In a survey study, 61% of the written comments from nurse and physician respondents related to requests for an ethicist or ethics committee specifically assigned to their ICU to address ethical conflicts associated with futile care (Palda et al., 2005).

Ethical conflict related to decisions about patient care. Families and health care professionals emphasize quality of life differently in relationship to decisions about life-sustaining treatments, with families considering the value of life as a higher priority than quality of life when compared to health care professionals (Sprung et al., 2007). Patient and family risk factors, such as signs of patient suffering or unrealistic family expectations, were most likely to be perceived as potential ethical conflicts by nurses (Pavlish, Hellyer, et al., 2015).

Disagreements between the health care team and patient's family members about appropriate goals of care are common (Dodek et al., 2016; Dyo et al., 2016; Edwards, Thronson, & Dyck, 2012; Edwards, Thronson, & Girardin, 2012; Henrich et al., 2016; Lusignani et al., 2016; Mobley et al., 2007; Palda et al., 2005). Health care professionals also report concerns that families are given too much responsibility to make decisions about patient treatments (Henrich et al., 2016). Conflicts with patients' family members are more likely to occur during a prolonged stay in the ICU (Edwards, Thronson, & Dyck, 2012; Studdert et al., 2003). The odds of experiencing a conflict were greater for patients at a higher risk of death, and for those in a medical ICU (Studdert et al., 2003).

Consequences of ethical conflict. Ethical conflict can have a negative impact on patients, families, and health care professionals (Azoulay et al., 2009; Edwards, Thronson, & Dyck, 2012; Fassier & Azoulay, 2010; Henrich et al., 2016; Meth et al., 2009; Paradis et al., 2014; Pattison, 2004; Pavlish, Brown-Saltzman, So, et al., 2015; Pavlish, Hellyer, et al., 2015;

Piers et al., 2014). As the result of family-team or interprofessional conflicts nurses have described “backing away” from the family to protect themselves from the emotional turmoil of the patient care situation (Edwards, Thronson, & Dyck, 2012), and nursing advocacy may be limited (Paradis et al., 2014). Conflict can compromise the quality of patient and family care, with consequences described in the literature as transfer of care to another ICU, limitation of family member visitation, fragmented care, high intensity and inadequate communication with families, and legal action (Azoulay et al., 2009; Meth et al., 2009; Paradis et al., 2014; Pattison, 2004). Patients may experience delays in treatment decisions and nonbeneficial aggressive treatment; families are likely to report confusion about conflicting opinions of health care professionals, mistrust in the health care team, dissatisfaction, and greater psychological distress (Fassier & Azoulay, 2010; Pattison, 2004; Pavlish, Hellyer, et al., 2015).

Moral Distress

Moral distress is a response to ethical conflict (Falcó-Pegueroles et al., 2016; Falcó-Pegueroles et al., 2013), and has been studied extensively in critical care nurses (Browning, 2013; Corley et al., 2005; Elpern et al., 2005; Falcó-Pegueroles et al., 2016; Falcó-Pegueroles et al., 2015; Karanikola et al., 2014; Kleinknecht-Dolf et al., 2015; Leggett et al., 2013; McAndrew et al., 2011; Mobley et al., 2007; Molazem et al., 2013; O’Connell, 2015; Papathanassoglou et al., 2012; Sauerland et al., 2014; M. A. Wilson et al., 2013). The term was first defined by philosopher Andrew Jameton as a situation in which a nurse knows the morally correct action, but institutional constraints make it impossible to follow through with the action (Jameton, 1984). In his book about the ethical issues in nursing practice, Jameton (1984) described the ‘moral problems of nursing’, in which nurses are unable to practice in the holistic way they were educated to care for clients. The etiology of nurse moral distress was identified as an

institutional focus on medicine and technology, rather than the values of health and compassion that undergird the nursing profession (Jameton, 1984).

Wilkinson (1987) conducted one of the first moral distress nursing studies, capturing the complexity of the phenomenon and the internal (powerlessness, socialization to follow orders, fear of losing job, or past actions not working) and external constraints (hospital policy, inadequate support from nursing administration, physicians, and legal issues) nurses face when confronting ethical concerns. The term ‘moral outrage’ was identified in nurses’ narratives (Wilkinson, 1987). Although this study is nearly 30 years old, the issues identified by Wilkinson remain a concern today in critical care nursing practice. Wilkinson (1987) described moral outrage as anger that occurs because of the immoral actions of others, and feeling powerless to stop it. Although the term moral outrage did not receive attention in the literature immediately after Wilkinson’s (1987) study, it captures the overwhelming frustration nurses express when their perspectives are not heard by interprofessional colleagues in clinical care. The concept of moral outrage is a theme in the growing body of moral distress literature that has evolved from 1995 to today (Burston & Tuckett, 2013; Falcó-Pegueroles et al., 2015; Huffman & Rittenmeyer, 2012; Lamiani, Borghi, & Argentero, 2017; Vanderheide, Moss, & Lee, 2013).

Moral distress is now a widely recognized term and has been studied in other disciplines (Hamric & Blackhall, 2007; Hamric et al., 2012; Whitehead et al., 2015). Although other health care professionals experience moral distress (Allen et al., 2013; Hamric & Blackhall, 2007; Hamric et al., 2012; Whitehead et al., 2015), nurses have the highest levels of moral distress in studies that have compared moral distress by profession (Dodek et al., 2016; Hamric et al., 2012; Whitehead et al., 2015). Findings from recent studies affirm that moral distress commonly occurs during end-of-life decisions that relate to following family wishes to continue life-support

when not in the best interest of the patient, and when optimal patient care is compromised (Dodek et al., 2016; Dyo et al., 2016; Henrich et al., 2016; Karagozoglu et al., 2017; Lusignani et al., 2016).

Among nursing professionals, critical care nurses have significantly more moral distress intensity and frequency compared to nurses working in noncritical care specialties (Dyo et al., 2016). Demographic findings in relationship to moral distress remain conflicted (Dyo et al., 2016; Karagozoglu et al., 2017; Lusignani et al., 2016); however, a consistent finding in prior reviews (McAndrew et al., 2016; Oh & Gastmans, 2015), and current literature is that years of nursing experience is associated with moral distress (Dodek et al., 2016; Lusignani et al., 2016; Salem, 2015). The type of specialty ICU may be a predictor of moral distress, with nurses working in general and medical ICUs reporting more ethical conflict (Park et al., 2015; Studdert et al., 2003), and higher moral distress frequency and intensity scores (Ganz et al., 2013; Karanikola et al., 2014).

Although there is a plethora of descriptive studies about moral distress, few have studied the effects of the phenomenon over time or with repeated measures (de Boer, van Rosmalen, Bakker, & van Dijk, 2016). The science related to this concept has not moved beyond prediction. What is known, and has sparked considerable attention, is the influence of moral distress on care quality (Henrich et al., 2016; McAndrew et al., 2016). However, this relationship has only been identified through qualitative, exploratory studies from the perspective of nurses.

The following manuscript was the final draft accepted for publication in *Nursing Ethics* (McAndrew et al., 2016). This paper presents the state of the science of moral distress in critical care nursing practice from 2009 to 2015, providing direction for future research. The section

immediately following the manuscript continues the presentation of results for the literature review.

Manuscript

Moral Distress in Critical Care Nursing: The State of the Science

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Abstract

Moral distress is a complex phenomenon frequently experienced by critical care nurses. Ethical conflicts in this practice area are related to technological advancement, high intensity work environments, and end-of-life decisions. An exploration of contemporary moral distress literature was undertaken to determine measurement, contributing factors, impact, and interventions. This state of the science review focused on moral distress research in critical care nursing from 2009 to 2015, and included 12 qualitative, 24 quantitative, and 6 mixed methods studies. Synthesis of the scientific literature revealed inconsistencies in measurement, conflicting findings of moral distress and nurse demographics, problems with the professional practice environment, difficulties with communication during end-of-life decisions, compromised nursing care as a consequence of moral distress, and few effective interventions. Providing compassionate care is a professional nursing value and an inability to meet this goal due to moral distress may have devastating effects on care quality. Further study of patient and family outcomes related to nurse moral distress is recommended.

Key words: moral distress, ethical conflict, critical care nursing, end-of-life, professional practice environment

Moral Distress in Critical Care Nursing: The State of the Science

Moral distress occurs when a nurse cannot follow through with moral actions, and compromises professional integrity (AACN, 2008; Corley, 2002; Jameton, 1984, 1993; Wilkinson, 1987). Ethical conflict is an antecedent to moral distress and occurs commonly in nursing practice (Azoulay et al., 2009; Falcó-Pegueroles et al., 2013; Falcó-Pegueroles et al., 2015; Meth et al., 2009; Studdert et al., 2003). Nurses describe moral distress as a painful experience of frustration, anger, sadness, helplessness, and suffering (McLeod, 2014; Russell, 2012; Wilkinson, 1987). The phenomenon is complex and impacts the physical, psychological, and emotional well-being of nurses (Burston & Tuckett, 2013; Corley, 2002; McCarthy & Gastmans, 2015; Musto et al., 2015; Russell, 2012). If the experience of moral distress remains unresolved a nurse may experience emotional exhaustion, and consider leaving a position, or the profession (Corley, 2002; Huffman & Rittenmeyer, 2012; Oh & Gastmans, 2015). In addition, certain nursing behaviors attributed to moral distress may compromise the quality and safety of patient and family care (Burston & Tuckett, 2013; Corley, 2002; Gutierrez, 2005; McCarthy & Gastmans, 2015; Musto et al., 2015; Oh & Gastmans, 2015; Vanderheide et al., 2013).

Prior reviews provide knowledge about the general experience of moral distress in hospital nurses (Huffman & Rittenmeyer, 2012), sources of moral distress (Oh & Gastmans, 2015), organizational and psychological components of moral distress (Lamiani et al., 2015), as well as nurse outcomes (Burston & Tuckett, 2013). A major omission of prior reviews is specificity to the critical care practice area. Critical care nurses are at high risk for moral distress due to ethical conflicts created by technological advancement, high intensity work environments, and frequent exposure to death (Burston & Tuckett, 2013) (McAndrew & Leske, 2015; McAndrew et al., 2011). Attention to moral distress in this practice area is important given the

frequency ethical conflict occurs (Azoulay et al., 2009), and the impact on nurses, patients, and families (AACN, 2008; Burston & Tuckett, 2013; Corley et al., 2005; Elpern et al., 2005; Falcó-Pegueroles et al., 2015; Huffman & Rittenmeyer, 2012; Russell, 2012). These factors provide the rationale for an exploration of quantitative and qualitative literature. Understanding moral distress within the context of critical care nursing may better inform future research.

Objectives

The purpose of this state of the science review is to describe moral distress research in critical care nursing from 2009 to 2015. This timeframe was selected because prior reviews have addressed moral literature published before 2011. Specific questions included:

- 1) How has moral distress been measured?
- 2) What factors contribute to moral distress?
- 3) What is the impact of moral distress on nurses, patients, and families?
- 4) What interventions may be effective in mitigating moral distress?

Methods

Design

This state of the science analysis followed the mixed method review methodology described by Whitemore and colleagues (Whitemore, Chao, Jang, Minges, & Park, 2014). The scoring system for mixed methods reviews was used as a general guide to critically appraise research studies (Pluye, Gagnon, Griffiths, & Johnson-Lafleur, 2009).

Search strategy

Moral distress was the main search term used to identify the research literature and combined with other terms including intensive care unit, critical care, intensive care, critical care, moral, ethics, distress, and interventions. Core health sciences databases used in the search

included: Cumulative Index to Nursing and Allied Health Literature (CINAHL), the National Library of Medicine (MEDLINE/PubMed) and Psychological Abstracts Information Services (PsychINFO). References lists also were reviewed to identify studies. Inclusion criteria were defined as publication in the years 2009 to 2015, full text, research articles and English language. Pediatrics, neonatal intensive care, dissertations, and case studies were excluded.

A total of 525 studies were screened for inclusion. After removing duplicates 321 articles remained. When applying the limits of full text, English language and research studies 60 articles met eligibility; however, 18 were eliminated due lack of specificity to moral distress. There were 42 research studies subsequently included in this review (12 qualitative, 24 quantitative and 6 mixed methods).

Analytic strategy

The four research questions guided data extraction during the iterative review process. A table was constructed to examine similarities and differences in study design, research focus, and findings. An independent reviewer critiqued results for clarity and consistency.

Results

The scientific literature was synthesized for moral distress measurement, contributing factors, patient, family and nurse outcomes, and interventions. Table 1 summarizes reviewed studies.

Moral Distress Measurement

Various tools have been developed to quantitatively measure moral distress (Falcó-Pegueroles et al., 2013; Hamric et al., 2012; Wocial & Weaver, 2013). The Moral Distress Scale (MDS) (Corley et al., 2001) and the MDS-Revised (MDS-R) (Hamric et al., 2012) were the most frequently used instruments in the reviewed literature. The MDS-R measures the intensity and

frequency of moral distress like the MDS; however, it also provides an overall summative moral distress score (Hamric et al., 2012). New tools for moral distress measurement include the Moral Distress Thermometer (Wocial & Weaver, 2013) and the Ethical Conflict in Nursing Questionnaire Critical Care Version (ECNQ-CCV)(Falcó-Pegueroles et al., 2013). The Moral Distress Thermometer is a single item tool with an 11-point analogue-type scale (Wocial & Weaver, 2013). This tool provides a real-time assessment of moral distress that may be applied to actual clinical situations. The ECNQ-CCV measures ethical conflict by placing moral distress along a continuum of moral responses (Falcó-Pegueroles et al., 2013).

Frequency and intensity of moral distress. In the reviewed studies moral distress intensity is reported as moderate (Browning, 2013; Falcó-Pegueroles et al., 2013; Hamric et al., 2012; Karanikola et al., 2014; Maiden et al., 2011; Mason et al., 2014; McAndrew et al., 2011; Sauerland et al., 2014; Silén et al., 2011; M. A. Wilson et al., 2013) to high (Allen et al., 2013; Molazem et al., 2013; Papathanassoglou et al., 2012). The frequency of moral distress is reported as low (Ganz, Wagner, & Toren, 2015; Karanikola et al., 2014; McAndrew et al., 2011; Papathanassoglou et al., 2012) to moderate (Kleinknecht-Dolf et al., 2015). A work environment survey showed moral distress increased significantly, from 23.2% in 2008 to 32.7% in 2013 (B. T. Ulrich, Lavandero, Woods, & Early, 2014).

Sociodemographic factors. While some have reported no relationship between moral distress and demographics (Allen et al., 2013; Leggett et al., 2013; McAndrew et al., 2011; Molazem et al., 2013), others have found that culture, role, gender, religion, age, and years in practice may influence reports of moral distress (S. Davis, Schrader, & Belcheir, 2012; Ganz et al., 2015; Hamric et al., 2012; Karanikola et al., 2014; O'Connell, 2015; Papathanassoglou et al., 2012; Whitehead et al., 2015). Italian, Greek, Spanish, Belgian, and German nurses reported

higher levels of moral distress than other European national groups (Papathanassoglou et al., 2012; Whittmore et al., 2014). Staff nurses have greater moral distress than nurse managers (Ganz et al., 2015; Karanikola et al., 2014) and physicians (Hamric et al., 2012; Whitehead et al., 2015). Female nurses reported more moral distress than males (Karanikola et al., 2014; O'Connell, 2015). Nurses who base ethical decision-making on religious beliefs reported higher levels of moral distress than those guided by work or life experience, family values, or the code of ethics (S. Davis et al., 2012). Some studies report that younger nurses experienced higher levels of moral distress (Ganz & Berkovitz, 2012; Woods et al., 2015). In contrast to these findings others have found that nurses with more nursing experience, or years within a clinical position had greater levels of moral distress (Hamric et al., 2012; Sauerland et al., 2014).

Nurses in critical care settings experience higher levels of moral distress than other nursing practice areas (Whitehead et al., 2015). Medical and surgical critical care nurses report greater moral distress frequency than nurses working in coronary, neurosurgical, pediatric, neonatal, or cardiac surgery intensive care units (ICUs) (Karanikola et al., 2014). Those working with adult populations reported significantly higher moral distress than those in pediatrics (Allen et al., 2013). Nurses who had left a position or considered leaving reported higher moral distress scores (Papathanassoglou et al., 2012; Sauerland et al., 2014; Whitehead et al., 2015).

In summary, there are conflicting findings on demographics in the moral distress literature. It is unclear whether moral distress intensifies during the time one works in a critical care nursing position, or if moral distress intensity diminishes over time. There may be important differences in the experience of moral distress that are dependent upon the practice environment and patient population.

Factors that Contribute to Moral Distress

The organizations in which critical care nurses practice impacts the nursing experience of moral distress. A negative relationship has been found between moral distress and nurse-physician relationships and collaboration (Karanikola et al., 2014; McAndrew et al., 2011; Papathanassoglou et al., 2012), elements of the practice environment (McAndrew et al., 2011), organizational ethical climate (Hamric et al., 2012; Sauerland et al., 2014; Silén et al., 2011), nurse autonomy (Karanikola et al., 2014; Papathanassoglou et al., 2012), and nurse psychological empowerment (Browning, 2013). Moral distress is frequently experienced during the process of end-of-life decision-making (Browning, 2013; Hamric et al., 2012; McAndrew & Leske, 2015; McLeod, 2014; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Shorideh et al., 2012; Weinzimmer et al., 2014). Lack of limit setting for futile treatment may potentiate the experience of moral distress in critical care nurses (Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011).

Nurse-physician relationships. Collaboration, the quality of nurse-physician relationships, and moral distress have a negative relationship (Karanikola et al., 2014; McAndrew et al., 2011; Papathanassoglou et al., 2012). Assisting a physician who is providing incompetent care has been identified as a high scoring item for both frequency and intensity of moral distress (Browning, 2013; McAndrew et al., 2011; Papathanassoglou et al., 2012; Sauerland et al., 2014; M. A. Wilson et al., 2013). Nurses were more likely to report physician communication as a cause of a medication error when they reported higher levels of moral distress (Maiden et al., 2011).

The challenges of working within an interdisciplinary team and consequential poor communication and collaboration were described in many studies (Bruce et al., 2015; Choe et al., 2015; McAndrew & Leske, 2015; McLeod, 2014; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Shorideh et al., 2012; Varcoe et al., 2012; Weinzimmer et al., 2014). Nurses reported that medical values take priority over nursing values within the organizations they practice (Mason et al., 2014; Shorideh et al., 2012). Unprofessional behavior of physician colleagues is also described by nurses as a barrier to addressing ethical conflict in patient care (Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Varcoe et al., 2012).

Nursing autonomy/collaboration. Nurses described the need to be involved in decisions about patient care (McLeod, 2014). Nurses have expressed feeling devalued and their contributions to care ignored (Choe et al., 2015; Shorideh et al., 2012; Varcoe et al., 2012). Moral distress frequency has a negative relationship with nurse autonomy and collaboration (Karanikola et al., 2014; Papathanassoglou et al., 2012). Nurses value health care team relationships (McLeod, 2014) and conflict resolution (Bruce et al., 2015). When nursing efforts fail to promote team cohesion nurses report increased emotional investment in the case (Bruce et al., 2015), anger with physicians, and moral distress (Choe et al., 2015).

Organizational Challenges. Numerous studies have examined the influence of the organization on moral distress (Atabay et al., 2015; Karanikola et al., 2014; McAndrew et al., 2011; Papathanassoglou et al., 2012; Sauerland et al., 2014; Silén et al., 2011; B. T. Ulrich et al., 2014). The organizational ethical climate has been negatively correlated with moral distress (Hamric et al., 2012; Silén et al., 2011; Whitehead et al., 2015), and climates dominant in rules, individualism, or organizational interest are positively related to moral distress (Atabay et al., 2015). Moral distress was predictive of nurse reports of participation in hospital affairs,

leadership and support, and resources and staffing in a study examining the influence of moral distress on the practice environment (McAndrew et al., 2011). Organizational barriers to nursing autonomy and holistic nursing care include: a) hierarchical relationships, b) poor teamwork, c) incompetent health care workers, d) fear of reporting unsafe behaviors, e) poor staffing ratios, f) inadequate time to care for patients, g) lateral violence, h) critical care technology that may not meet patient needs, i) overwhelming demands of the ICU environment, and j) lack of support (Maiden et al., 2011; Mason et al., 2014; Pavlish et al., 2013; Sauerland et al., 2014; Varcoe et al., 2012).

A disconnect between an organization's efficiency and quality of care is a source of nursing moral distress (Varcoe et al., 2012). High moral distress scores are associated with financial constraints in the health care environment (Papathanassoglou et al., 2012). Nurse managers have reported high levels of moral distress in response to questions about balance between administrative and patient care responsibilities (Ganz et al., 2015). Similarly, nurses described discomfort when work related tasks hindered their ability to advocate for patients, or the economic benefits of the hospital were considered a priority over human life (Choe et al., 2015).

Communication. Communication problems among the nurse, patient, family, and physician during end-of-life decision-making are frequently described as a source of moral distress (Mason et al., 2014; McAndrew & Leske, 2015; Piers et al., 2014; Shorideh et al., 2012; Weinzimmer et al., 2014). Unified communication plans and shared team goals may decrease moral distress (McAndrew & Leske, 2015; McLeod, 2014; Weinzimmer et al., 2014).

Nurses report not being heard during inter-professional interactions about end-of-life care and describe feeling powerlessness, anger, and frustration (Mason et al., 2014; McAndrew &

Leske, 2015; McLeod, 2014; Sauerland et al., 2014; Shorideh et al., 2012; Weinzimmer et al., 2014; Wiegand & Funk, 2012). In research examining perceived inappropriate care in ICUs, nurses were more likely to perceive a discrepancy between the level of patient care and prognosis, and subsequently experienced higher levels of moral distress than physicians in training, or senior physicians (Piers et al., 2014).

Moral decision-making and advocacy. There is a small body of literature addressing nurse moral decision-making (McAndrew & Leske, 2015; McLeod, 2014; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011). Patient and family advocacy is a theme in nurses' description of their professional role (McAndrew & Leske, 2015; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Shorideh et al., 2012; Weinzimmer et al., 2014; Wiegand & Funk, 2012). Nurse perceptions of an unsuccessful advocacy attempt may result in the experience of moral distress (Lawrence, 2011; Mason et al., 2014; McAndrew & Leske, 2015; McLeod, 2014; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Sauerland et al., 2014; Shorideh et al., 2012; Weinzimmer et al., 2014), and negatively impact future attempts of advocacy in nursing practice (Wiegand & Funk, 2012).

Nurse, Patient and Family Outcomes

Moral distress is associated with negative outcomes for nurses, patients and families (Dalmolin, Lunardi, Lunardi, Devos Barlem, & da Silveira, 2014; De Villers & DeVon, 2013; Ganz & Berkovitz, 2012; Maiden et al., 2011; Mason et al., 2014; Özden, Karagözoğlu, & Yıldırım, 2013; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Varcoe et al., 2012; Wiegand & Funk, 2012; Winters

& Neville, 2012). Some nurses report changes in their nursing practice, and consider leaving critical care or the nursing profession because of moral distress (Karanikola et al., 2014; Maiden et al., 2011; Papathanassoglou et al., 2012; Sauerland et al., 2014; Wiegand & Funk, 2012). Patients and families may experience poor communication, prolonged deaths and inadequate nursing support (Bruce et al., 2015; Choe et al., 2015; McAndrew & Leske, 2015; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Shorideh et al., 2012; Varcoe et al., 2012; Weinzimmer et al., 2014; Wiegand & Funk, 2012).

There is a weak positive relationship between moral distress and burnout (Dalmolin et al., 2014). Elements of nurse burnout including depersonalization and emotional exhaustion are both negatively correlated with job satisfaction (Özden et al., 2013). Unresolved moral distress may lead to compromised patient and family care (Choe et al., 2015; Varcoe et al., 2012; Wiegand & Funk, 2012). The consequences of nurse moral distress identified in the literature include patient and family avoidance, desensitization, withdrawing from patient care, and depersonalization of patients (Bruce et al., 2015; Choe et al., 2015; Dalmolin et al., 2014; De Villers & DeVon, 2013; Özden et al., 2013; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Varcoe et al., 2012; Weinzimmer et al., 2014; Wiegand & Funk, 2012). A positive correlation between moral distress and nurse avoidance behaviors was found in one study (De Villers & DeVon, 2013). Nurses reported “looking away” from ethical issues when the health care team was in conflict due to the challenges imposed by addressing ethical issues in care (Pavlish et al., 2013).

Negative social judgments about patients and families by nurses and other health care providers is another factor that may impact patient and family care (Varcoe et al., 2012). Some

also found that nurses expressed regret for treating patients ‘mechanically in a cool manner’ and noted that more experienced nurses were indifferent to ethical nursing concerns (Choe et al., 2015). In a study that explored team dynamics, critical care nurses shared that when disagreement among team members about treatment options occurred, mixed messages about a patient’s condition were presented in family meetings (Bruce et al., 2015). Negative outcomes for the patient and family included a) suffering, b) prolonged and undignified dying, c) poor quality of life, d) lack of time with family, e) delayed or prolonged treatment, and f) false hope (Wiegand & Funk, 2012).

Many nurses report compromises to care quality as the result of moral distress (Ganz & Berkovitz, 2012; Maiden et al., 2011; Varcoe et al., 2012; Winters & Neville, 2012; Woods et al., 2015). The sources of moral distress most often connected with care quality were workload and pressure to provide less than optimal care for cost reduction (Choe et al., 2015; Kleinknecht-Dolf et al., 2015; Varcoe et al., 2012; Winters & Neville, 2012; Woods et al., 2015). Positive correlational relationships were found among moral distress, compassion fatigue, intent to resign, nurse staffing and medications errors (Maiden et al., 2011). Nurses experiencing moral distress were fearful about reporting unsafe behaviors in the workplace (Ganz & Berkovitz, 2012; Maiden et al., 2011; Sauerland et al., 2014).

Interventions

Few moral distress interventional studies have been conducted (Leggett et al., 2013; Molazem et al., 2013). Of the two interventional studies reviewed, both utilized educational strategies with nurses. Leggett and colleagues (Leggett et al., 2013) developed four 60-minute classes and Molazem and colleagues (Molazem et al., 2013) conducted an eight-hour workshop using role-play and group discussion teaching methods. A concerning finding in Leggett’s

(Leggett et al., 2013) study was that moral distress scores were significantly higher in the group that had moral distress measured after the intervention. In contrast, Molazem (Molazem et al., 2013) found that those who participated in educational sessions had a significant decrease in moral distress.

Discussion

The majority of the reviewed studies were descriptive (Browning, 2013; Choe et al., 2015; De Villers & DeVon, 2013; Karanikola et al., 2014; Lawrence, 2011; Maiden et al., 2011; Mason et al., 2014; McAndrew & Leske, 2015; McAndrew et al., 2011; McLeod, 2014; Papathanassoglou et al., 2012; Sauerland et al., 2014; Shorideh et al., 2012; Weinzimmer et al., 2014; Wiegand & Funk, 2012), and correlation was the most frequently used analytic strategy (Browning, 2013; De Villers & DeVon, 2013; Karanikola et al., 2014; Lawrence, 2011; Maiden et al., 2011; Mason et al., 2014; McAndrew et al., 2011; Papathanassoglou et al., 2012; Sauerland et al., 2014). Many of the studies used independent t-tests or analysis of variance (ANOVA) to provide a comparison of moral distress scores based on demographic nurse characteristics (B. T. Ulrich et al., 2014; M. A. Wilson et al., 2013; Woods et al., 2015).

There are limitations of the reviewed studies including those imposed by design, sampling, measures, and procedures. Descriptive, exploratory and correlational approaches cannot provide information about causation. Within the correlational studies, most relationships were weak to moderate, and there is a risk for type 1 errors as the number of analyses increase (Meyers, Gamst, & Guarino, 2013). Use of multivariate tests may decrease this risk; however, few studies (Dalmolin et al., 2014; Lawrence, 2011; Piers et al., 2014; Silén et al., 2011) used this approach.

Sampling bias was a factor in many of the studies because moral distress was examined within a specific population, culture or practice area of critical care. Some of the studies used lists provided by professional organizations or nursing conferences to recruit participants. Nurses who attend conferences may be more engaged in professional development and not accurately represent the general population of nurses in critical care. Small sample sizes and low response rates is an additional limitation in the reviewed literature. Few studies enrolled participants from multiple institutions (Ganz et al., 2015; Piers et al., 2014; Shorideh et al., 2012; Silén et al., 2011). Of the two interventional studies (Leggett et al., 2013; Molazem et al., 2013) there was risk of nurses sharing knowledge about the intervention due to sampling from the same practice area.

While the majority of studies used a reliable and valid tool to measure moral distress (Allen et al., 2013; Browning, 2013; Dalmolin et al., 2014; De Villers & DeVon, 2013; Falcó-Pegueroles et al., 2015; Ganz & Berkovitz, 2012; Kleinknecht-Dolf et al., 2015; Lawrence, 2011; Leggett et al., 2013; Mason et al., 2014; McAndrew et al., 2011; Molazem et al., 2013; O'Connell, 2015; Whitehead et al., 2015; Woods et al., 2015), modifications to existing tools or new tool development make comparison across studies difficult. The lack of diversity in research design may also speak to measurement challenges with moral distress (Bridges et al., 2013; Huffman & Rittenmeyer, 2012). New measurement tools may hold promise for future research and require further testing. The Moral Distress Thermometer (Wocial & Weaver, 2013) may better gauge moral distress in daily clinical practice, or in repeated measures study designs. The ECNQ-CCV (Falcó-Pegueroles et al., 2013) measures moral distress; however, it also examines other responses such as moral outrage, moral indifference, moral uncertainty, moral

well-being, and moral dilemmas. This additional information may be used to develop or tailor interventions to address ethical problems in nursing practice.

Implications for Future Research

Moral distress is increasing in critical care nursing (Kleinknecht-Dolf et al., 2015; B. T. Ulrich et al., 2014). Culture, gender, religion, age, years in practice, as well as role within an organization may impact moral distress (S. Davis et al., 2012; Ganz & Berkovitz, 2012; Ganz et al., 2015; Hamric et al., 2012; Karanikola et al., 2014; Papathanassoglou et al., 2012; Sauerland et al., 2014; Whitehead et al., 2015; Woods et al., 2015); however, these findings have not been consistent across studies and require further research. There are conflicting findings in terms of age and years of nursing experience in relationship to moral distress (Ganz & Berkovitz, 2012; Hamric et al., 2012; Sauerland et al., 2014; Woods et al., 2015). While it is theorized by Epstein and colleagues (Epstein & Hamric, 2009) that moral distress may create a residue over time that leads to intensification of moral distress, this has not been extensively tested.

Critical care nurses experience greater moral distress than those in other practice areas (Whitehead et al., 2015), with adult medical and surgical nurses experiencing more moral distress than those in other types of critical care units (Allen et al., 2013; Karanikola et al., 2014). There may be important differences in moral distress that are specific to the ethical issues occurring in certain patient populations; however, this requires further research.

The practice environment within the organization may contribute to the experience of moral distress (Karanikola et al., 2014; Martins & Robazzi, 2009; McAndrew et al., 2011; Papathanassoglou et al., 2012; Sauerland et al., 2014). This finding is consistent with prior reviews (Burston & Tuckett, 2013; Huffman & Rittenmeyer, 2012; Lamiani et al., 2015); however, measures of the practice environment have been limited and varied across studies

(Karanikola et al., 2014; McAndrew et al., 2011; Papathanassoglou et al., 2012; Sauerland et al., 2014). Future multi-site studies with reliable and valid measures would allow meaningful comparison among different types of institutions.

Nurse-physician relationships and level of collaboration is a significant contributor to moral distress in critical care nursing practice (Karanikola et al., 2014; McAndrew & Leske, 2015; McLeod, 2014; Papathanassoglou et al., 2012; Shorideh et al., 2012; Weinzimmer et al., 2014). The negative relationship between moral distress and autonomy, as well as collaboration (Karanikola et al., 2014; Papathanassoglou et al., 2012) is of concern. If nurses do not feel valued in professional interactions this may have serious consequences for patients and families. The ability to uphold nursing values within interdisciplinary relationships has not been explored and remains a gap in the scientific literature. Understanding the views of other disciplines is important for development of effective interventions to enhance collaborative practice. Comparing the experience of moral distress in nursing to moral distress experienced by other disciplines may illuminate new perspectives to stimulate inter-professional dialogue and targeted areas for interventional research.

Challenges imposed by health care organizations are recognized as a source of moral distress. Moral distress research remains predominately within the limits of individual nurse perspectives rather than addressing the systems that impact the experience (Hardingham, 2004; McCarthy & Gastmans, 2015; Musto et al., 2015; Weinzimmer et al., 2014). Concerns about conflict resolution, staffing levels, fears of reporting unsafe behaviors, lateral violence, hierarchies and devaluing of nursing (Mason et al., 2014; Sauerland et al., 2014; Shorideh et al., 2012; B. T. Ulrich et al., 2014) may contribute to moral distress; however, none of the reviewed studies quantified these specific organizational related barriers. Measurement of these factors is

required to test interventions aimed at improving working conditions in the organizations nurses practice.

End-of-life decision-making is a major contributor to moral distress in critical care nursing (Browning, 2013; Choe et al., 2015; McAndrew & Leske, 2015; McLeod, 2014; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Piers et al., 2014; Shorideh et al., 2012; Weinzimmer et al., 2014). Research examining the prevalence of medical futility, the impact of organizational ethics, and ethical conflicts unique to patient populations is recommended.

Almost half of the literature about moral distress in critical care is qualitative, and contributes to depth in understanding the phenomenon. A limitation of this analytic strategy is the lack of measurement and control required to determine the effectiveness of interventions. Moral distress may decrease nursing empowerment (Browning, 2013) and hinder nurse advocacy behaviors (Wiegand & Funk, 2012). In the reviewed literature nurses described difficulty caring for patients and families when experiencing moral distress^{54,55}. This is important to study further, as patients and families depend on nurses for support. Measurement of nurse moral distress, nurse advocacy behaviors, and patient and family outcomes may provide information about the impact of moral distress on patients and families.

While moral distress may be a negative experience for many nurses, it can also increase autonomy and result in professional growth and development (Burston & Tuckett, 2013; Corley, 2002; Hanna, 2004; Huffman & Rittenmeyer, 2012; Varcoe et al., 2012). Critical reflective practice (Lawrence, 2011) may be an intervention to help nurses identify the complexities of the moral distress experience and develop strategies to cognitively reframe the situation (Peter & Liaschenko, 2013; Rushton, Kaszniak, & Halifax, 2013). Multidisciplinary team involvement

may enhance critical reflective practice. Further research is required to gain insights into nurse growth and development as a consequence of moral distress, and the impact on the healthcare team.

There is a paucity of literature exploring the impact of moral distress on care quality (De Villers & DeVon, 2013; Ganz & Berkovitz, 2012; Wiegand & Funk, 2012). Research addressing moral distress and patient and family outcomes is predominately qualitative and from the perspective of nurses and physicians (Bruce et al., 2015; Choe et al., 2015; McAndrew & Leske, 2015; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Varcoe et al., 2012; Weinzimmer et al., 2014; Wiegand & Funk, 2012). Of the reviewed studies only one actually measured a patient outcome (Maiden et al., 2011). None of the reviewed studies directly measured family outcomes. While it is accepted that moral distress negatively impacts care for patients and families (Burston & Tuckett, 2013; Huffman & Rittenmeyer, 2012; Lamiani et al., 2015), without measurement it is difficult to know whether interventions aimed at mitigating moral distress are successful and positively impact patient and family outcomes as intended.

Few interventional studies (Leggett et al., 2013; Molazem et al., 2013) exist and have conflicting findings. Some have found that moral distress scores increase after moral distress education (Leggett et al., 2013), while others have appreciated a decrease in moral distress scores (Molazem et al., 2013). Education is the only tested intervention and the measure of change is moral distress scores. Measurement of nursing autonomy, advocacy and collaboration may provide meaningful information about changes in moral distress before and after interventions. Moral distress interventions need to match the complexity of the experience, and address multifactorial causes. Interventions aimed at improving shared decision-making, collaboration,

nurse-physician relationships, end-of-life decision-making, and organizational ethical climate require development and testing.

Limitations

Inclusion criteria were full text and research studies only and thus, content available in abstracts, philosophical papers, editorials, and dissertations may have broadened the findings reported in this paper. Additionally, limiting to English language potentially eliminated articles that may elucidate cultural differences in moral distress literature. Due to the fact that critical care was the focus of the review, any generalizations about findings are only pertinent to this practice area. Neonatal and pediatric critical care was excluded and should be included in future reviews. Finally, inclusion of qualitative and quantitative research evidence with methodological diversity complicate synthesis (Whittemore & Knafl, 2005).

Conclusions

The research on moral distress in critical care continues to progress, and this review provides an update on the state of the science. Representative samples from multiple health care institutions are required to provide meaningful insights about moral distress in critical care nursing practice. Providing compassionate care is a professional nursing value and an inability to meet this goal due to moral distress may have devastating effects on the quality of care to patients and families in critical care. Further study of patient and family outcomes related to nurse moral distress is recommended.

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Table 1. Evidence table for moral distress literature. All significant relationships reported as p less than .05. MD = moral distress

Source	Research focus	Study design	Sample, measurement and Response Rate (RR)	Summary of findings
Allen et al. (2013)	MD among health care professionals	Descriptive, cross sectional	523 physicians, 1,794 adult and pediatric nurses/other disciplines 6 hospitals (Southeast US) MDS-R RR: Physicians (12%), Nurses (15%), Social workers (16%), RT (12%)	Higher MD in adult hospitals ($t = 2.86$) MD higher for those who had left a position ($F = 24.326$), or considering leaving ($t = 4.410$)
Atabay et al. (2015)	Relationships between ethical climate type and MD	Descriptive, cross sectional	Turkish nurses- online survey HECS MDS RR: 72%	MD 3 main factors: organizational constraints ($\alpha = .89$), misinformed and over-treated patients ($\alpha = .84$) and lack of time/resources ($\alpha = .80$)
Browning (2013)	Relationship between MD and psychological empowerment?	Descriptive, cross sectional	Nurses from American Association of Critical-Care Nurses (AACN) MDS Psychological Empowerment Instrument (PEI) RR: 277 critical care nurses	PEI scores negatively correlated with MD frequency ($r = -0.194$) ELNEC critical care training ($\beta = -0.215$) and PEI ($\beta = 0.222$) predicted MD frequency ($R^2 = 0.289$)
Bruce et al. (2014)	Intrateam dynamics and MD	Descriptive, exploratory Case study methodology	Nurses, physicians and ancillary staff Medical and Surgical ICU Open-ended questions RR: 29 interviews (16 nurses, 6 physicians, 7 ancillary staff)	Team disagreements mentioned 3 to 5 times per interview
Choe et al. (2015)	Experiences of moral distress	Descriptive/exploratory Phenomenological analysis	Critical care nurses 2 hospitals in South Korea RR: 14 nurses	Ambivalence towards treatment and care Dilemmas from limited autonomy in treatments Conflicts with physicians/institutional policy
Dalmolin et al. (2014)	Relationship between MD and burnout	Descriptive, cross sectional	500 nurses, nursing assistants, and nursing technicians, 3 hospitals in southern Brazil	MD and burnout ($r = .102$) MD with burnout as predictor showed professional fulfillment was significantly negatively related to MD ($\beta = -.107$)

Source	Research focus	Study design	Sample, measurement and Response Rate (RR)	Summary of findings
			MDS Maslach Burnout Inventory (MBI) RR: 75%	
Davis et al. (2012)	Nurses' ethical beliefs and MD	Descriptive, cross sectional	1,144 nurses (Idaho) Researcher developed tool RR: 10%	Significant differences in MD based on ethical beliefs (F = 9.063)
De Villers and DeVon (2012)	Relationship between MD and avoidance behaviors	Descriptive, cross sectional	121 nurses from critical care or noncritical care units MDS Horowitz's Impact of Event Scale (IES) RR: 24%	Small positive correlation between MD and avoidance behavior
Falco-Pegueroles et al. (2013)	Development of tool	Descriptive and cross sectional	205 Critical care nurses 2 hospitals in Spain ECNQ-CCV	$\alpha = .882$ EFA = explained 33.41% of variance Confirmatory factor analysis model ($\chi^2 = 243.45, p = .189$, comparative fit index = .972)
Falco-Pegueroles, et al. (2015)	Exposure to ethical conflict	Descriptive and cross sectional	292 nurses 2 hospitals in Spain ECNQ-CCV RR: 69%	Indifference and moral well-being = low levels of exposure to ethical conflict Uncertainty and moral dilemma = intermediate levels of exposure Moral distress and moral outrage = high levels of exposure
Ganz and Berkovitz (2012)	Ethical dilemmas, MD and quality of care	Descriptive, cross sectional	Surgical nurses from 2 hospitals in Israel Ethical Dilemmas in Nursing (EDN)- Quality of Nursing Care (QNC) RR: 74%	Frequency of ethical dilemmas/moral distress negative correlation with nursing skill ($r = -.25$), meeting patient needs ($r = -.23$) and quality of care ($r = -.27$) Age negatively correlated with MD intensity ($r = -.23$)
Ganz et al. (2015)	Frequency and intensity of ethical dilemmas	Descriptive, cross sectional	Middle managers 4 hospitals in Israel Ethical Dilemmas in Nursing-Middle Manager	Assistant head nurses and supervisors had significant differences in scores (F = 4.43)

Source	Research focus	Study design	Sample, measurement and Response Rate (RR)	Summary of findings
	and MD		(EDN-MM) Questionnaire RR: 133 Nurse Managers	
Hamric et al. (2012)	Revision of MDS	Descriptive, cross sectional	Physicians and nurses Academic medical center MDS-R Hospital Ethical Climate Survey (HECS) RR: 60% (physicians) and 48% (nurses)	$\alpha = .89$ More nurse experience higher MD ($r = .22$) Physicians lower MD than nurses ($t = -5.786$) MDS-R scores higher for those considering leaving ($F = 48.392$) MD was negatively correlated with ethical climate ($r = -.402$)
Karanikola et al. (2012)	Relationship between MD and: professional autonomy and collaboration	Descriptive, cross sectional, secondary data analysis	637 Italian nurses European Critical Care Conference Varjus's Autonomy tool MDS-R Bagg's Collaboration and Satisfaction about Care Decisions Scale RR: 90.2%	Female MD higher ($t = -4.178$, 95% CI, CI -10.31, -3.84) MD negatively associated with collaboration ($r = -0.169$) and autonomy ($r = -0.134$)
Kleinknecht-Dolf et al. (2015)	MD instrument modification	Descriptive, cross sectional, pilot study	Survey emailed to German speaking nurses Switzerland hospital MDS-R- translated into German RR = 55%	Ethical principles relate to decision making ($M = 3.36$, $SD = .69$)
Lawrence (2011)	Relationship among MD, work engagement and critical reflective practice	Mixed methods Descriptive, content analysis	198 ICU nurses (medical, pediatric and neonatal) Utrecht Work Engagement Scale (UWES) MDS Critical reflective practice questionnaire RR: 14%	Moral distress and work engagement negatively correlated ($r = -0.48$) Work experiences "exhausting and demoralizing"
Leggett et al. (2013)	Effect of a MD educational intervention	Mixed method, Grounded theory, Quasi Experimental	Interviews with 7 BICU nurses in United States 13 nurses were randomized to group A (MD measured before intervention) or group B (MD	Difference in median scores of MDS-R ($U = 36$, $z = -2.14$) with MDS median higher for group B (92) versus group A (40.5) No differences 6 weeks post intervention

Source	Research focus	Study design	Sample, measurement and Response Rate (RR)	Summary of findings
		Intervention = 60 minute classes for 4 weeks	measured after intervention) Interviews MDS-R Self-Efficacy Scale (SE)	Qualitative results: feelings of stress
Maiden et al. (2011)	Relationship between compassion fatigue, MD and medication errors	Mixed method, descriptive, thematic analysis	205 AACN certified nurses MDS The Professional Quality of Life Scale (ProQOL) Medication Error Survey RR: 20%	Positive relationship between MD and compassion fatigue ($r = .21$) Higher levels of MD more likely to report physician communication as reason for error ($r = 0.24$) Need process and practice changes
Mason et al. (2014)	Compassion satisfaction, compassion fatigue, MD and educational level and work engagement	Mixed method, descriptive, content analysis	34 trauma surgical ICU nurses at an academic medical center MDS ProQol-5 UWES-9 Work Engagement (shortened version) Open-ended questions RR: 77%	MD associated with: role conflict, suffering during end-of-life decision making, powerlessness and medical versus nursing values
McAndrew and Leske, (2015)	End-of-life decisions	Exploratory, grounded theory	Nurses and physicians from four different ICUs Midwest academic teaching hospital Unstructured interviews RR: 11 participants (7 nurses and 4 physicians)	Main theme: End-of-life decision making is a balancing act 1) emotional responsiveness 2) professional role and responsibilities 3) intentional communication and collaboration
McAndrew et al. (2011)	Relationship of moral distress to the professional practice environment	Descriptive, cross-sectional	235 nurses ICUs in Midwest teaching hospital MDS Practice Environment Scale (PES) RR: 33%	MD intensity and nurse-physician relationships negatively correlated ($r = -0.25$) Moral distress frequency and participation in hospital affairs, $r = -0.34$, leadership and support, $r = -0.32$, resource and staffing, $r = -0.25$, nurse-physician relationships $r = -0.30$ MD predictive of professional practice ($R^2 = 0.11$)

Source	Research focus	Study design	Sample, measurement and Response Rate (RR)	Summary of findings
McLeod (2014)	Perception of ethics when withdrawing treatment	Exploratory, thematic analysis	Nurses in England Neuroscience/trauma ICU Semistructured interviews RR = 6 nurses	Three related ethical factors related to decision-making: 1) Personal moral beliefs 2) Nursing Experience 3) Decision-making process
Molazem et al. (2013)	Effect of educational intervention	Experimental, RCT Intervention = 4-hour educational workshop for 2 weeks	60 nurses working in a cardiac care unit in Iran n = 30 (intervention) n = 30 (control) MDS	Intervention group significant decrease in MD scores after the intervention Prior to intervention (M = 4.44, SD = 1.24) <ul style="list-style-type: none"> 1 month post (M = 3.34, SD = 0.996) 2 months post (M = 3.048, SD = 1.25)
O'Connell (2015)	Gender differences in MD	Descriptive, cross sectional	Online survey to US critical care nurses RR = 33%	MD scores different between men and women ($t = 2.48$) Females (CI = 112.75 +/- 54.31) higher MD than males (CI = 60.43 +/- 18.83)
Ozden et al. (2013)	Perceptions of futility, exhaustion and job satisfaction	Descriptive, cross sectional	206 nurses working in ICUs 3 teaching hospitals in Turkey MBI Futility Questionnaire Minnesota Satisfaction Questionnaire (MSQ)- RR: 66%	Job satisfaction negatively correlated with depersonalization ($r = -.426$) and emotional exhaustion ($r = -.324$)
Papathanassoglou et al. (2012)	Relationship between MD, professional autonomy and nurse-physician collaboration	Descriptive, cross sectional	Nurses attending European Critical Care international conference Varjus's Autonomy tool MDS-R Bagg's Collaboration and Satisfaction about Care Decisions Scale RR: 255 surveys (17 countries)	MD frequency negative correlation with autonomy and collaboration ($r_s = -0.174$) Intent to leave positively associated with MD ($r_s = 0.229$)

Source	Research focus	Study design	Sample, measurement and Response Rate (RR)	Summary of findings
Pavlish et al. (2011)	Ethically difficult situations	Exploratory, descriptive, critical incident technique (CIT)	Nurses from an Ethics of Caring Conference in Los Angeles, CA Structured questionnaire RR: 91 Nurses	Early indicators = conflict, suffering, poor communication
Pavlish et al. (2011)	Moral regrets	Exploratory, descriptive, critical incident technique (CIT)	Nurses from an Ethics of Caring Conference in Los Angeles, CA Structured questionnaire RR: 91 nurses	41.4% of the sample expressed regret for unnecessary patient suffering
Pavlish et al. (2013)	Ethics Screening and Early Intervention Tool for clinical nursing practice	Mixed method, descriptive and categorical analysis, feasibility study	ICU and oncology nurses from 2 urban community hospitals Participants used tool 3 months Focus groups RR: 28 nurses	Not prepared for difficult conversations Contact with ethics and palliative team risky
Piers et al. (2014)	Perceived inappropriate care	Descriptive, cross sectional	1,651 total participants (1,218 nurses, 180 physicians in training, and 227 senior physicians) in European ICUs Inappropriate Care Questionnaire RR = 93%	Perceived workload independently associated with higher perceived inappropriate care (OR= 1.50; 95% CI, 1.08-2.08)
Sauerland et al. (2014)	Perceptions of MD and ethical climate	Mixed methods, descriptive, thematic analysis	948 critical care nurses Academic hospital in the Southwest MDS HECS Open ended questions RR: 23%	MD and hospital ethical climate ($r = -0.51$) Positive relationship between MD frequency and years in current nursing position ($r = 0.15$) Difference in hospital ethical climate responses for nurses who had left a position due to MD ($t = 2.65$) Theme: the environment of care
Shorideh et al. (2012)	Experience of MD	Exploratory, Content analysis	Iranian ICU nurses Teaching hospitals Semistructured interview	1) Institutional barriers 2) Communication problems 3) Futile actions/errors

Source	Research focus	Study design	Sample, measurement and Response Rate (RR)	Summary of findings
			RR: 31 ICU nurses (28 nurses and 3 educators)	4) Inappropriate allocation of resources
Silen et al. (2011)	Relationship between MD and ethical climate	Descriptive, cross sectional	432 Swedish nurses from 16 wards (including ICU) from 2 hospitals MDS HECS RR: 58%	Negative correlation between MD frequency and ethical climate ($r^2 = -.328$)
Ulrich et al. (2014)	Work environments	Descriptive, cross-sectional	Convenience sample of AACN members AACN Critical Care Nurse Work Environment Survey RR: 8,444 surveys	23.3% MD frequently/9.4% very frequently
Varcoe et al. (2012) ⁵⁵	Nurses' perceptions of and responses to MD	Exploratory, interpretive description	1700 acute care nurses from a database in British Columbia, Canada MDS HECS 3 open-ended questions RR: 22%	Result of actions: "being blown off" and reprimanded
Weinzimmer et al. (2014)	Team and individual factors in MD	Exploratory	Health professionals Tertiary care center in Houston, Texas Semi-structured interviews RR: 29 health professionals (13 nurses)	1) Advocacy 2) Preparing families 3) Team dynamics
Whitehead et al. (2015)	Levels of MD among health care providers	Descriptive, comparison, cross sectional	Web survey to 1, 513 nurses and other disciplines Tertiary medical center in Virginia MDS-R HECS RR = 28%	MD higher in ICU versus non-ICU (M = 89 versus M = 70.5) ICU and adult practice areas higher than pediatric (M=81.1 versus M = 57.9) HECS scores negatively correlated with MD ($r = -.5.16$)
Wiegand & Funk (2012)	Consequences of MD	Descriptive, exploratory,	204 nurses from 6 critical care units at University Hospital	Changes practice: 60% intervened and 40% would not intervene in the future

Source	Research focus	Study design	Sample, measurement and Response Rate (RR)	Summary of findings
		thematic analysis	Open-ended survey RR: 23%	
Wilson et al. (2013)	MD in ICU and transitional care unit	Descriptive, cross-sectional	105 Nurses working in a Medical-Surgical ICU (MSICU) (n = 81) and transitional care Unit (n = 24) MDS-R Author developed Coping Strategies and Resource Questionnaire RR: 58%	Ethics committee (79%)/debriefing (78%) as resources
Winters & Neville (2012)	Missed care in practice	Exploratory, categorical analysis	Acute care nurses from New Zealand Semistructured interviews RR: 5 nurses	MD = unable to complete care/compromise standards
Wocial and Weaver (2012)	Instrument development	Descriptive, cross sectional	3,751 Nurses Tertiary care hospitals in the Midwest MDS Moral Distress Thermometer (MDT): visual analogue scale RR: 28.3%	Convergent validity for MDT to MDS low to moderate correlation between the instruments ($r = .404$, adult) and ($r = .368$, pediatric)
Woods et al. (2015)	Frequency and intensity of moral distress	Descriptive, cross sectional	1500 nurses New Zealand Nurses Organization MDS-R Open-ended questions RR: 27.4%	Differences age groups ($F = 5.06$) Younger nurses higher ($M = 72.27$) versus ($M = 52.07$) Difference in hours of ethics preparation ($\chi^2 = 31.83$)

The following sections continue with ICU climate of care variables. Results for organizational resources for ethical conflict and burnout are presented next, followed by a summary and critique of this body of literature.

Organizational Resources for Ethical Conflict

Organizational resources for ethical conflict is described in the literature as the ethical behavior of the organization in relationship to patients, families, employees, groups and communities, also known as the ethical climate (Suhonen, Stolt, Virtanen, & Leino-Kilpi, 2011). Health care organizations have different types of ethical climates that can be measured by examining employee perceptions of organizational ethical practices and decision making (Cullen, Victor, & Bronson, 1993; Olson, 1998). The ethical climate can be founded in rules, emphasize a caring orientation with a focus on well-being of stakeholders, or support individualism and organizational interests to varying degrees (Atabay et al., 2015; Borhani, Jalali, Abbaszadeh, & Haghdoost, 2014). Organizations focused on employee well-being are associated with higher reports of teamwork (Rathert & Fleming, 2008). Ethical climates dominant in rules are correlated with nurse perceived systems challenges, including organizational constraints and lack of time and resources, while organizations that focus on organizational interests and individualism are positively related to nurse perceptions of misinformed and overtreated patients (Atabay et al., 2015). Caring organizational ethical climates are positively related to nurse job satisfaction (Goldman & Tabak, 2010). Others have reported higher exposure to ethical conflict for ICU nurses in poor work environments and a lack of nurse involvement in decision making (Falcó-Pegueroles et al., 2016). Thus, the perception of the organizational ethical climate is related to nurse appraisal of system imposed barriers to patient and family care.

Although nurse reports of the organizational ethical climate vary across studies; it is well documented that moral distress is negatively related to the organizational ethical climate (Hamric & Blackhall, 2007; Hamric et al., 2012; Pauly, Varcoe, Storch, & Newton, 2009; Sauerland et al., 2014; Silén, Svantesson, Kjellström, Sidenvall, & Christensson, 2011; Whitehead et al., 2015). Nurses report lower scores for the ethical climate than physicians (de Boer et al., 2016; Hamric & Blackhall, 2007). In the only reviewed study to use repeated measures of moral distress, there was a trend towards poorer ethical climate scores and moral distress intensity (de Boer et al., 2016). Moral distress is negatively correlated with the quality of care, and positively related to job related stress (de Veer, Francke, Struijs, & Willems, 2013). Moral distress frequency is negatively related to nurse empowerment (Ganz et al., 2013), while job satisfaction is positively related to the quality of care (J. Adams et al., 2014).

The organizational ethical climate and the work environment. There is a positive correlation between the organizational ethical climate and nurse's intent to stay in the position (Mrayyan, 2008), and between organizational attributes and the professional practice environment (Hinno, Partanen, Vehviläinen-Julkunen, & Aaviksoo, 2009). Healthy work environments are positively related to care quality, and differences in the work environment based on the type of ICU have been reported, with medical ICUs reporting better work environments (Bai et al., 2015). Nurses who reported high scores on the hospital ethical climate survey and received ethics education from their employer were more likely to stay in their current position (Hart, 2005). The frequency of moral distress and unsuccessful nurse coping strategies were positively related to leaving the nursing profession in a systematic review of moral distress and the ethical climate (Schluter, Winch, Holzhauser, & Henderson, 2008).

The workplace influences nurses' ability to address ethical concerns in their practice (Olson, 1995, 1998), and there may be a lack of consistency with organizational demands and patient and family needs (Suhonen et al., 2011). Ulrich et al. (2007) found in a sample of nurses who rated the ethical climate only slightly higher than neutral, 37% reported their job is more difficult because of ethical issues in their practice, 52.8% reported frustration and anger about the inability to resolve ethical issues, and 68.2% reported they were upset others avoid ethical issues. Nurses' perception of organizational resources for ethical conflict and the resultant work environment may potentiate ethical conflict due to institutional barriers that hinder nursing autonomy and holistic care (Huffman & Rittenmeyer, 2012; Moss et al., 2016; Suhonen et al., 2011). Similarly, Falcó-Pegueroles et al. (2016) found that nurses who reported being in an environment in which ethical conflict was addressed experienced less ethical conflict. Factors such as the overwhelming demands of the ICU environment, critical care technology that does not meet patient needs, and lack of nursing support for resolution of ethical conflict contribute to nurses' inability to deliver high quality patient and family care (Maiden et al., 2011; Mason et al., 2014; Pavlish et al., 2013; Sauerland et al., 2014; Varcoe et al., 2012).

The ethical climate of the organization and the nurse work environment are interdependent (Humphries & Woods, 2016). Factors such as inadequate nurse leader support and overwork may decrease nursing attention to the resolution of ethical concerns in clinical practice (Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Shorideh et al., 2012; Varcoe et al., 2012) and limit patient and family advocacy (Varcoe et al., 2012; Wiegand & Funk, 2012). In qualitative studies, nurses have described the importance of the working environment, especially nurse manager support and good relationships with physicians; however, large numbers of inexperienced nurses, fewer

resources in health care, inadequate nurse support, and poor interprofessional teamwork are challenges that negatively influence nursing practice (Bruce et al., 2015; Choe et al., 2015; Fernandes & Moreira, 2013; McLeod, 2014; Shorideh et al., 2012; Silén, Kjellström, Christensson, Sidenvall, & Svantesson, 2012; Sørлие, Kihlgren, & Kihlgren, 2004).

Across studies nurses shared a sense of frustration with the task-focused aspects of their work, and an inability to meet the demands of the job resulting in moral distress (Choe et al., 2015; Cronqvist, Theorell, Burns, & Lützn, 2004; Fernandes & Moreira, 2013; Silén et al., 2012; Sørлие et al., 2004; Varcoe et al., 2012). Permeating themes were problems with end-of-life decision making, communication and hierarchical challenges, issues related to cost containment, and inadequate resources (Cobanođlu & Algier, 2004; Cronqvist et al., 2004; Fernandes & Moreira, 2013; Malloy et al., 2009; Martins & Robazzi, 2009; Wiegand & Funk, 2012). As a consequence of challenges within health care systems, nurses report poor family care as the result of inadequate communication, prolonged patient deaths in the ICU, and a lack of institutional resources for families in distress (Bruce et al., 2015; Choe et al., 2015; Maiden et al., 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Shorideh et al., 2012; Varcoe et al., 2012; Weinzimmer et al., 2014; Woods et al., 2015). The literature reviewed supports that the organizational ethical climate and practice environment are major determinants of the quality of nursing care.

Burnout

Burnout is a condition or syndrome that develops in response to chronic work-related stress, and is characterized by three general attributes: 1) high levels of emotional exhaustion, 2) high levels of depersonalization, cynicism or detachment, and 3) low levels of effectiveness or accomplishment (Epp, 2012; Maslach et al., 2001; Moss et al., 2016). Burnout syndrome is a

state in which a person has difficulties coping with emotional stress due to excessive use of one's energy and resources, and leads to exhaustion, feelings of failure, and inadequacy (Embriaco et al., 2007).

Burnout is likely to occur when job ideals and expectations are inconsistent with the job requirements, and develops over time (Moss et al., 2016). General symptoms of burnout include frustration, anger, fear, anxiety, unprofessional behavior, hopelessness, and fatigue, with many of these burnout symptoms coinciding with those of moral distress (Embriaco et al., 2007; Moss et al., 2016). There is a negative relationship between nursing stress and nurse satisfaction (Losa Iglesias & Becerro de Bengoa Vallejo, 2013) and between burnout and nurse job satisfaction (Özden, Karagözoğlu, & Yıldırım, 2013).

Although there is no standard definition of burnout, there is consensus on the three components of the phenomenon (Maslach et al., 2001). Emotional exhaustion describes one's internal response to ongoing work stressors and the perception that one's personal resources are overextended or depleted (Maslach et al., 2009; Maslach et al., 2001). The hallmark of burnout syndrome is emotional exhaustion, as it is the point in which the person can no longer cope with the demands of the job (Embriaco et al., 2007; Maslach & Jackson, 1981). Depersonalization is a manifestation of the interpersonal and interprofessional relationship problems that occur when the person experiencing burnout attempts to distance themselves from others, or ignores the unique qualities of individuals by identifying clients as impersonal objects (Maslach et al., 2001). Depersonalization results in interactions with colleagues and clients that are negative or extremely detached (Maslach et al., 2001; Moss et al., 2016). An overall low level of accomplishment or perceived deficiency in one's work is the self-evaluative dimension of

burnout (Maslach et al., 2001), resulting in low professional self-esteem and the perception of poor job performance (Moss et al., 2016).

Severity and prevalence of burnout. Nurses in the ICU report moderate to high levels of burnout (Alharbi, Wilson, Woods, & Usher, 2016; Aytakin, Kuguoglu, & Yilmaz, 2014; da Silva et al., 2015; Guntupalli, Wachtel, Mallampalli, & Surani, 2014; Karanikola, Papathanassoglou, Mpouzika, & Lemonidou, 2012; Klopper et al., 2012; Losa Iglesias & Becerro de Bengoa Vallejo, 2013; Losa Iglesias, Becerro de Bengoa Vallejo, & Salvadores Fuentes, 2010; Merlani et al., 2011; Pereira et al., 2016; Poncet et al., 2007; Shoorideh, Ashktorab, Yaghmaei, & Alavi Majd, 2015; Tekindal, Tekindal, Pinar, Ozturk, & Alan, 2012; Young, Derr, Cicchillo, & Bressler, 2011; Zhang, Huang, & Guan, 2014). The interpreted severity of burnout is variable across studies (da Silva et al., 2015; Moss et al., 2016; van Mol, Kompanje, Benoit, Bakker, & Nijkamp, 2015).

The prevalence of burnout ranges from 16% to 46.5% in adult ICUs (van Mol et al., 2015). Nurses working in the ICU have higher burnout scores than those in other practice areas (Young et al., 2011). Some have reported higher burnout scores for nurses working in neonatal and pediatric ICUs than for those working in adult ICUs (Alharbi et al., 2016); however, others have reported no differences in burnout among types of specialty ICUs (Lederer, Kinzl, Traweger, Dosch, & Sumann, 2008).

Risk factors. Critical care nurses are at high risk for developing emotional exhaustion due to the high levels of stress related to high acuity patients, heavy workloads, and ICU nurse role expectations (Embriaco et al., 2007; Epp, 2012). Other risk factors for burnout include personal characteristics, organizational factors, and the quality of working relationships (Epp, 2012; Moss et al., 2016; Poncet et al., 2007). Job stress is positively related to burnout (Rushton

et al., 2015), and significantly increases the risk of burnout, with the odds of developing burnout 3.72 times higher for nurses who report feeling stressed in their job (Merlani et al., 2011).

Younger nurses with less working experience have reported higher burnout scores (Meltzer & Huckabay, 2004; Moss et al., 2016; Rushton et al., 2015; Zhang et al., 2014). In contrast, a positive relationship between years in critical care nursing and emotional exhaustion was found in another study (Losa Iglesias et al., 2010). Others found no differences in burnout and nurse demographics (Karanikola et al., 2012; Lederer et al., 2008).

There is a negative relationship between nurse burnout and nurse quality of life scores (physical, social and psychological health) (Aytekin et al., 2014). A nurse sample that had high scores for burnout reported low scores for the practice environment, specifically items related to staffing and resource adequacy (Klopper et al., 2012). Higher scores for emotional exhaustion were observed in health professionals who reported little support from superiors, coworkers, friends and relatives (Glasberg, Eriksson, & Norberg, 2007). In the only study to examine support resources for burnout, only 2 of the 5 surveyed ICUs had assistance for nurses experiencing burnout (Lederer et al., 2008). In qualitative studies that have explored burnout, nurses described high job demands with low levels of control, inadequate support, and expressed feelings of powerlessness (Severinsson, 2003; Sundin-Huard & Fahy, 1999). Burnout compromised the quality and quantity of nursing care (Aghabarary & Nayeri, 2016).

Consequences of burnout. Documented consequences of burnout include lower patient satisfaction, increased medical errors, more health care associated infections, and higher 30-day mortality (Moss et al., 2016). Burnout can be extremely costly for health care organizations due to the expense of employee absenteeism, turnover, and problems associated with patient care quality (Embriaco et al., 2007; Moss et al., 2016). In a study in which nurses experienced high

levels of burnout, family scores for their expectations of nurses were significantly higher than reports of the quality of nursing services for patients and families, indicating families were not satisfied with nursing care delivered (Tekindal et al., 2012). This study provides limited evidence that nurse burnout can negatively influence family care in the ICU.

The relationships among burnout, ethical conflict and moral distress. Repeated exposure to ethical conflict, a common occurrence in the ICU, may lead to burnout (Epp, 2012; Falcó-Pegueroles et al., 2013; Meltzer & Huckabay, 2004; Meth et al., 2009; Moss et al., 2016; Poncet et al., 2007; Rushton et al., 2015; Sundin-Huard & Fahy, 1999). Ethical conflict was found to be a significant predictor of burnout, with the odds of burnout three times higher for nurses and physicians experiencing conflict (Pereira et al., 2016). The experience of moral distress also contributes to nurse burnout (Epp, 2012; Flannery, Ramjan, & Peters, 2015). Researchers have identified a positive relationship between moral distress and nurse burnout (Dalmolin, Lunardi, Lunardi, Devos Barlem, & da Silveira, 2014; Meltzer & Huckabay, 2004; Rushton et al., 2015; Shoorideh et al., 2015), and moral distress is predictive of burnout (Rushton et al., 2015). Participation in medically inappropriate or futile care is one of the most frequently described antecedents to moral distress and burnout (Elpern et al., 2005; Flannery et al., 2015; Hamric & Blackhall, 2007; Hamric et al., 2012; Meltzer & Huckabay, 2004; Poncet et al., 2007). A significant correlation between situations involving futile care and emotional exhaustion has been reported (Meltzer & Huckabay, 2004), and there is a positive relationship between burnout and the need to stop or withhold life-sustaining treatments (Teixeira et al., 2014).

Summary of ICU Climate of Care Literature

ICU nurses frequently experience ethical conflict (Azoulay et al., 2009; Edwards, Thronson, & Girardin, 2012; Meth et al., 2009; Studdert et al., 2003), and there are moderate to

high levels of burnout documented in this population (Alharbi et al., 2016; Aytekin et al., 2014; da Silva et al., 2015; Guntupalli et al., 2014; Karanikola et al., 2012; Klopper et al., 2012; Losa Iglesias & Becerro de Bengoa Vallejo, 2013; Losa Iglesias et al., 2010; Merlani et al., 2011; Pereira et al., 2016; Poncet et al., 2007; Shoorideh et al., 2015; Tekindal et al., 2012; Young et al., 2011; Zhang et al., 2014). There is a negative relationship between moral distress and the organizational ethical climate (Hamric & Blackhall, 2007; Hamric et al., 2012; Pauly et al., 2009; Sauerland et al., 2014; Silén et al., 2011; Whitehead et al., 2015). Numerous challenges in the working environment limit nurses' ability to deliver high quality care to patients and families (Choe et al., 2015; Cronqvist et al., 2004; Fernandes & Moreira, 2013; Silén et al., 2012; Sørлие et al., 2004; Varcoe et al., 2012). Broader organizational factors, including the work environment and organizational resources for ethical conflict resolution (Chesla & Stannard, 1997; Humphries & Woods, 2016; Pavlish et al., 2013) are major determinants of nurses satisfaction with their role, and whether or not they will remain working in their position (J. Adams et al., 2014; Atabay et al., 2015; Hinno et al., 2009; Mrayyan, 2008; Schluter et al., 2008). Nurses may experience incongruity between the demands of their job as prescribed by the organization, and the needs of patients and families (Suhonen et al., 2011). It is difficult for nurses to provide high quality family care when there is inadequate nurse support at unit and organizational levels (Ganz et al., 2013; Glasberg et al., 2007; Huffman & Rittenmeyer, 2012; Humphries & Woods, 2016; Rathert & Fleming, 2008; Severinsson, 2003; Ulrich et al., 2007; Varcoe et al., 2012), and this has the potential to negatively affect the delivery of patient and family care (Aghabarary & Nayeri, 2016; Azoulay et al., 2009; Fassier & Azoulay, 2010; Moss et al., 2016; Tekindal et al., 2012; Wiegand & Funk, 2012).

Critique of ICU Climate of Care Literature

The nursing literature related to ethical conflict, moral distress, burnout and nurses' perception of the organizational ethical climate is predominately descriptive. Although the sample sizes are large in many of these studies ($n = 400$ to $7,498$), the majority used convenience samples from one institution. However, 14 studies examined nurse outcomes across institutions and even countries (Anstey et al., 2015; Azoulay et al., 2009; Dodek et al., 2016; Dyo et al., 2016; Edwards, Thronson, & Girardin, 2012; Karagozoglu et al., 2017; Klopper et al., 2012; Lederer et al., 2008; Palda et al., 2005; Piers et al., 2014; Poncet et al., 2007; Sprung et al., 2007; Studdert et al., 2003; Zhang et al., 2014). A large portion of the literature was conducted in the United States; however, many other countries were represented including: Turkey, Canada, Czech Republic, Israel, Netherlands, Portugal, Sweden, United Kingdom, Korea, Egypt, Brazil, China, Switzerland, Greece, Saudi Arabia, Austria, Spain, Iran, and France. Only one study used repeated measures (de Boer et al., 2016), and a small portion of the studies applied multivariate models and analytic techniques (Anstey et al., 2015; Dalmolin et al., 2014; Dodek et al., 2016; Glasberg et al., 2007; Merlani et al., 2011; Pereira et al., 2016; Piers et al., 2014; Rushton et al., 2015; Sprung et al., 2007). The ethical conflict literature was more evenly distributed in qualitative ($n = 10$) and quantitative ($n = 17$) analytic approaches than burnout or nurses' perception of organizational resources for ethical conflict, both of which were predominately quantitative studies.

The measurement of ethical conflict across studies varied, with some studies using researcher developed tools. The Maslach Burnout Inventory-Human Services Survey (MBI-HSS) (Maslach et al., 2009; Maslach et al., 2001) was the instrument used to measure burnout in the majority of the reviewed studies (Alharbi et al., 2016; Aytakin et al., 2014; da Silva et al.,

2015; Dalmolin et al., 2014; Glasberg et al., 2007; Guntupalli et al., 2014; Karanikola et al., 2012; Klopper et al., 2012; Lederer et al., 2008; Losa Iglesias & Becerro de Bengoa Vallejo, 2013; Losa Iglesias et al., 2010; Meltzer & Huckabay, 2004; Merlani et al., 2011; Özden et al., 2013; Pereira et al., 2016; Poncet et al., 2007; Rushton et al., 2015; Teixeira et al., 2014; Tekindal et al., 2012; Zhang et al., 2014) with the exception of two (Shoorideh et al., 2015; Young et al., 2011). The Hospital Ethical Climate Scale (HECS) (Olson, 1998) was used most frequently in the reviewed literature to measure the ethical climate (de Boer et al., 2016; Hamric & Blackhall, 2007; Hart, 2005; Pauly et al., 2009; Sauerland et al., 2014; Silén et al., 2011; Ulrich et al., 2007; Whitehead et al., 2015), followed by the Ethical Climate Questionnaire (Cullen et al., 1993), with 4 studies using this tool (Atabay et al., 2015; Borhani et al., 2014; Goldman & Tabak, 2010; Rathert & Fleming, 2008).

Discussion of Literature and Gaps in the Science

The literature reviewed is rich in descriptions of families' and nurses' experiences in the ICU; however, only a small portion of quantitative studies have examined both family and nurse responses, and few considered the influence of organizational factors on family care delivery and family outcomes. There is a paucity of literature that has quantified the degree of FCC, and few studies have measured nurse provided family support. It is documented in the literature that organizational culture and unit based practice environments influence ethical conflict and moral distress (Anstey et al., 2015; Attia et al., 2013; Edwards, Thronson, & Dyck, 2012; Espinosa, Young, & Walsh, 2008; Ganz & Berkovitz, 2012; Henrich et al., 2016; Pavlish, Brown-Saltzman, So, et al., 2015); however, the relationship between these factors and family care and family outcomes has not been adequately explored in the literature.

Across the reviewed literature there is a theme that ethical conflict, burnout, and the organizational ethical climate have the potential to negatively affect nursing care delivery for patients and families; however, this has only been explored from the perspective of nurses. There is a documented need to explore nursing family care quality and how this may influence family outcomes (McAndrew et al., 2016; Mitchell et al., 2016; Olding et al., 2016; Paul & Rattray, 2008), and yet, only one of the reviewed studies measured this relationship (Hakio et al., 2015). Additionally, in the family literature there is little emphasis on positive family outcomes, with the majority of studies focusing on negative psychological symptoms in individual family members. Family well-being remains an important family outcome measure that requires further study. With the exception of a limited number of qualitative studies that used the family unit as an informant, none of the studies included in this review explored family measures from the perspective of multiple family members per patient. To advance family science in critical care, quantitative approaches must consider family member reports of various outcomes both within and across families.

There is a dearth of studies specifically linking the multiplex of the ICU climate of care to family care delivery and family outcomes. Most studies have examined only one or two of these related variables in isolation. The current study fills an important gap in the science by examining multiple nurse variables in relationship to nursing family care delivery and a positive family outcome.

Chapter Summary

Literature pertaining to the conceptual underpinnings of the current study was reviewed in this chapter. This summary of prior research provides evidence of the need to explore nurse reports of ethical conflict, burnout, and organizational resources for ethical conflict in the context

of families' perception of nursing care quality and family well-being in the ICU. Chapter III will operationalize study concepts, outline sampling and study procedures, and describe the analytic approaches used.

CHAPTER III

METHODS

The purpose of this Chapter is to describe study methods. Design, setting, sample recruitment, measurement, procedures, protection of human subjects, data management and planned analyses are addressed. Sample characteristics and reliabilities for instruments used in the study also are presented.

Design

The study used a cross-sectional, correlational design. There were two samples: family members and nurses. For clarity, procedures and measures are discussed separately for each sample.

Setting

The study took place in 5 specialty ICUs: medical (MICU), surgical (SICU), cardiovascular (CVICU), transplant (TICU), and neurological (NICU) at a level-one trauma and academic medical center in the Midwest from April 2017 through August 2017. At the time of the study the number of beds in each ICU was as follows: MICU (26), SICU (21), CVICU (20), NICU (9), and TICU (10). The hospital was selected because of size, the principal investigator's (PI) prior experience conducting research in this organization, and access to the population. Different critically ill patient populations are admitted to each specialty ICU; however, no known studies have demonstrated the family variables of interest differ by type of ICU.

The hospital is Magnet designated, with a strong nursing shared governance foundation. Hospital ICU nurse turnover and vacancy rates¹ at the time the study took place were below the

¹ Actual hospital turnover and vacancy rates at site of study are not publicly reported.

reported national average of 17.7% turnover and 8.5% vacancy (Nursing Solutions Inc., 2016). Turnover and vacancy rates remained relatively stable in all five ICUs during the course of data collection.

Family Sample

At least one family member per patient was recruited in the current study; however, when more than one family member was available attempts were made to recruit a second family member. Few studies in critical care have obtained responses from more than one family member; therefore, a second family member was recruited for possible dyadic family analyses. However, the study was powered on the number of individual family member responses.

No prior studies have examined all the variables in the proposed study. Effect size was based on a limited number of studies that reported R^2 or r values for at least one of the variables of interest (Åstedt-Kurki, Lehti, Tarkka, & Paavilainen, 2004; Hamric et al., 2012; McAndrew et al., 2011; Sauerland et al., 2014). Effect sizes for these studies were calculated based on the formula from Cohen (1988), and f^2 values ranged from .12 to .47. Based on the available literature, predictions of the population parameter (f^2) for the current study suggested a medium to large effect size (Cohen, 1988, 1992). A more conservative estimate of effect size was used to guide power calculations for the study given the wide range of f^2 values in prior research. When $f^2 = .15$, power set at .80, a significance criterion of .05, and 6 predictor variables, a sample of 97 family members was required (Soper, 2017).

Family data collection yielded a slow accrual of participants, indicating additional resources would be required to obtain a large family sample. With a small family sample size, it was not possible to enter six predictor variables into one model. To assure the study was adequately powered and guide further family data collection efforts, a new power analysis was

calculated using preliminary results ($R^2 = .22$) from the current study. Based on the f^2 value of .28 with power set at .80, a significance criterion of .05, and 2 predictor variables, at least 38 family members were needed to achieve an adequate sample size (Soper, 2017).

A convenience sample of family members was recruited in this exploratory study. Family members included the family spokesperson and another family member who was identified as having a close relationship with the patient. The family spokesperson was selected because he or she is typically the person who is most involved in the care of the critically ill family member. The family spokesperson was asked to identify the second family member for inclusion in the study when additional family members were available.

Family had to meet the following inclusion criteria to be eligible for participation: 1) the critically ill family member had to be on at least two or more life-sustaining treatments (mechanical ventilation, vasopressors, intra-aortic balloon pump, extracorporeal membrane oxygenation, ventricular assist devices, continuous renal replacement therapy, intracranial pressure monitoring/external ventricular drain, administration of mannitol or hypertonic saline to decrease intracranial pressure, deep sedation or hypothermia treatment, or temporary pacer), 2) the critically ill family member had to be at moderate to high risk of dying as determined by a Sequential Organ Failure Assessment Score (SOFA) score of 10 to 24, 3) the critically ill family member was in the ICU at least 48 hours prior to family participation, 4) members of the family regularly visited the critically ill patient in the ICU (accessibility for participation), 5) family member(s) were 18 years of age or older, and 6) reported an ability to understand English. It was beyond study resources to include a translator, and study instruments have not been translated into other languages. Family members were excluded from the study if: 1) less than 18 years of age, 2) exhibited signs of extreme agitation/threatened violence towards others, or 3) displayed

signs of altered mental status. Additionally, family members also were excluded if the patient was: 1) on a police hold (not allowed visitors), 2) suicidal, 3) injured in a family domestic dispute, 4) undergoing brain death testing and/or organ donation, or 5) actively dying and in the process of stopping life-sustaining treatments for end-of-life care.

In a prospective study using the SOFA with 30 randomly selected patients, interrater reliability was almost perfect for four of the six organ systems assessed, with two systems demonstrating good to moderate weighted Kappa values (Arts, de Keizer, Vroom, & de Jonge, 2005). Accuracy rates for organ systems assessed in the SOFA ranged from 73% to 99% (Arts et al., 2005). The SOFA was used in the current study to quantify severity of illness and recruit family members of patients at moderate to high risk of death. The total score on the SOFA ranges from 0 to 24 (Ferreira, Bota, Bross, Mélot, & Vincent, 2001; Vincent et al., 1998). Based on cutoffs established in prior research, patients with SOFA scores of 0 to 9 were grouped into a low risk of death (mortality less than 10 to 20%), and family members of these patients were excluded from the study (ClinCalc, 2017). Patients with scores of 10 to 14 were categorized as moderate risk of death (mortality of 40% to 60%) (ClinCalc, 2017) and these family members were asked to participate. Patients with scores of 15 to 24 were considered at high risk of death (mortality 80% to 90%) (ClinCalc, 2017) and these family members were also approached for inclusion in the current study.

A total of 300 patients were screened for family member inclusion in the current study, with 141 patients eligible based on a SOFA score of 10 to 24. Of these patients, 40 families were unavailable (out of state or did not visit), and 39 were not approached due to additional exclusion criteria. The most common reason for exclusion was an actively dying patient. There were 62 family members approached for participation in the study. Of these family members, 50 agreed

to participate (response rate of 71%). The flow diagram in Figure 4 provides a synopsis of family member enrollment. Family data were examined at the individual level due to an inadequate number of family dyads (n=6). The final family sample included 44 family members (family spokespersons).

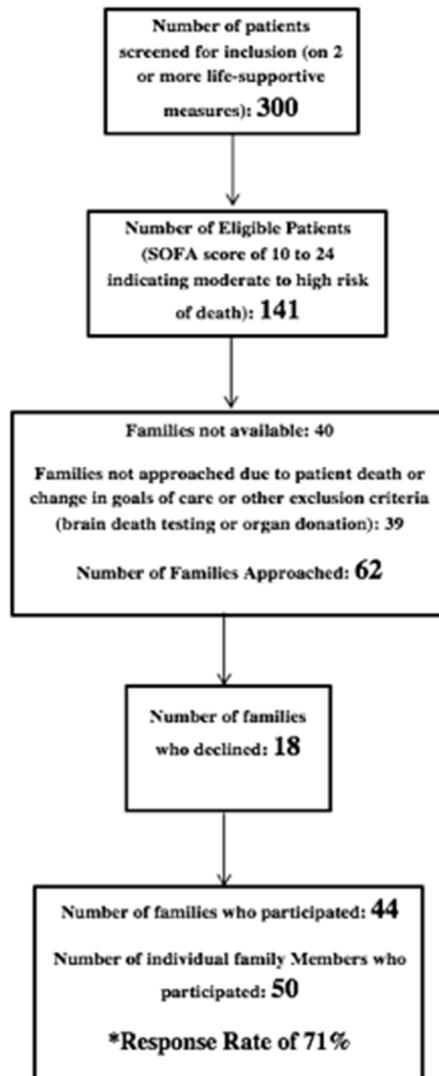


Figure 4. Family member enrollment.

Family characteristics. As shown in Table 2, the largest percentage of family members participated from the MICU, followed by the CVICU, TICU, SICU, and NICU. Almost half the

family sample defined their relationship as spouse/partner, and slightly more than 50% had not been in the ICU before as a family member. Females comprised a larger portion of the sample than males. The most common ethnicity was White/Caucasian, followed by Black or African American. The educational level of family members ($n = 40$) ranged from 9 years to 30 years, with a median of 14 years. Age ($n = 39$) ranged from 24 to 81 ($M = 52$, $SD = 13.18$).

Table 2

Characteristics of family participants (N = 44)

Characteristic	<i>n</i>	%
ICU of critically ill family member		
MICU	16	36.6
CVICU	9	20.5
SICU	8	18.2
NICU	2	4.5
TICU	9	20.5
Relationship to critically ill family member		
Spouse/partner	18	40.9
Child	7	15.9
Parent	9	20.5
Sibling	7	15.9
Other	3	6.8
In ICU before as family member		
Yes	21	47.7
No	23	52.3
Gender		
Male	11	25.0
Female	33	75.0
Ethnicity		
Hispanic or Latino or Spanish Origin of any race	1	2.3
Black or African American	9	20.5
White/Caucasian	33	75.0
Two or more races	1	2.3

Patient characteristics are shown in Table 3. Ethnicity was similar to the family sample, with most reported as White/Caucasian, followed by Black or African American. There were slightly more males than females. Patient age ranged from 19 to 88 years ($M = 58$, $SD = 18.39$). The SOFA score ranged from 10 to 21 ($Mdn = 13$), with 68.2% of the sample at moderate risk of

death and 31.8% at high risk of death (ClinCalc, 2017). Most patients were designated as a full code, indicating they were to receive cardiopulmonary resuscitation (CPR). Approximately half of the sample had an advance directive. The majority of the patients had 2 to 3 life-sustaining treatments in place at the time of family participation (total number of life-sustaining treatments, $n = 102$). Mechanical ventilation and vasopressor support were the most common type of life-sustaining treatments. The greatest percentage of family members participated on day 3 or 4 of the ICU admission. The most common diagnosis was respiratory failure. Total ICU length of stay ranged from 3 to 59 days ($Mdn = 9.5$). More than half the patient sample transferred out of the ICU, and approximately 30% died.

Table 3

Characteristics of Critically Ill Family Member (N = 44)

Characteristic	<i>n</i>	%
Ethnicity		
Hispanic or Latino or Spanish Origin of any race	1	2.3
Black or African American	6	13.6
White/Caucasian	33	75.0
Two or more races	1	2.3
Not reported	3	6.8
Gender		
Male	23	52.3
Female	18	40.9
Not reported	3	6.8
Code Status		
Full code	35	79.5
DNR	6	13.6
Not reported	3	6.8
Advance directive		
Yes	21	47.7
No	20	45.5
Not reported	3	6.8
Number of life-sustaining treatments		
1	1	2.3
2	30	68.2
3	9	20.5
4	2	4.5
5	2	4.5

Characteristic	<i>n</i>	%
SOFA score		
10 to 14 (Moderate risk of death)	30	68.2
15 to 21 (High risk of death)	14	31.8
Type of life-sustaining treatments		
Mechanical ventilation	41	93.2
Vasopressors	30	68.2
Continuous Renal Replacement Therapy (CRRT)	10	22.7
Extracorporeal Membrane Oxygenation (ECMO)	4	9.1
Ventricular Assist Device (VAD)	3	6.8
Intra-aortic balloon pump (IABP)	1	2.3
Deep sedation	10	22.7
Hypothermia therapy	2	4.5
Temporary pacer	2	4.5
Category of Diagnosis		
Severe sepsis or septic shock	3	6.8
Respiratory failure	9	20.5
Trauma	6	13.6
Cardiac	7	15.9
Liver disease	6	13.6
Neurological	4	9.1
Post code/cardiac arrest	4	9.1
Hematological/Oncological	2	4.5
Not reported	3	6.8
Patient length of stay in ICU prior to family participation		
2 Days	9	20.5
3 Days	16	36.4
4 Days	19	43.2
Patient disposition after ICU stay		
Transfer to floor	28	63.6
Died	13	29.5
Not reported	3	6.8

Note. Three family members did not provide permission to view the patient EMR. This is denoted as not reported for characteristics in the table. Patients were on multiple life-supportive treatments, and therefore, the frequency is $n = 102$ for this characteristic. The percentage reflects the number of patients on a particular type of life-sustaining treatment.

Nurse Sample

A convenience sample of critical care nurses from ICUs in the organization was recruited for the study. For nurses to be eligible they had to be: 1) employed by the organization as a registered nurse, 2) full time (Full Time Equivalent of .875 or higher) within one of the ICUs, and 3) in current position for 3 months or longer. Nurses who floated to all the ICUs, worked a

limited number of hours, or were new hires or transfers at the time of the study were excluded, as the purpose of this research was to examine the overall and unit based ICU climate of care.

There were 250 full time nurses working in the 5 ICUs who were invited to participate. At the time of the study there were 40 nurses in the NICU, 80 nurses in the MICU, 60 nurses in the SICU, 20 nurses in the TICU, and 50 in the CVICU who met study eligibility criteria.

Nurse characteristics. A total of 166 ICU nurses attempted to take the survey; however, 51 of these respondents completed less than 1% of the overall number of items and were removed from further analysis. There were 115 nurse respondents who completed at least one of the survey instruments, yielding a response rate of 46%. Nurse demographic characteristics and response rates for each individual ICU are shown in Table 4, and employment characteristics in Table 5. The largest percentage of respondents were from the MICU; however, TICU had the highest unit response rate. Most nurses worked 10-hour or 12-hour shifts, and were female, White/Caucasian, and BSN prepared. Nurses in the age range of 25 to 35 years comprised more than half of the sample. A large percentage of the nurse respondents had considered leaving their nursing position.

Table 4

Nurse Characteristics (N = 115)

Characteristic	<i>n</i>	%
Educational attainment in nursing		
Diploma	7	6.1
ADN	15	13.0
BSN	75	65.2
MSN	9	7.8
DNP	1	.9
Not reported	8	7.0
Age		
21 to 24 years	7	6.1
25 to 35 years	61	53.0
36 to 45 years	12	10.4
46 to 55 years	16	13.9
56 to 65 years	12	10.4
Not reported	7	6.1

Characteristic	<i>n</i>	%
Gender		
Male	12	10.4
Female	96	83.5
Not reported	7	6.1
Ethnicity		
Hispanic or Latino or Spanish of any race	4	3.5
Asian	3	2.6
White	94	81.7
Two or more races	2	1.7
Not listed	3	2.6
Not reported	9	7.8

Table 5

Nurse Response Rates by ICU and Employment Characteristics (N = 115)

Characteristic	Response Rate	<i>n</i>	%
Specialty ICU			
MICU	44%	35	30.4
CVICU	44%	22	19.1
SICU	37%	22	19.1
NICU	35%	14	12.2
TICU	75%	15	13.0
Not reported		7	6.1
Shift			
10 hour days		23	20.0
10 hour PMs		15	13.0
10 hour nights		9	7.8
12 hour days		24	20.9
12 hour nights		29	25.2
8 hour days		2	1.7
8 hour nights		1	.9
Other		5	4.3
Not reported		7	6.1
FTE			
.875		44	38.3
.9		50	43.5
1.0		14	12.2
Not reported		7	6.1
Have you considered leaving your position?			
Yes		72	62.6
No		36	31.3
Not reported		7	6.1

Nurse years in their current specialty ICU, years practiced in the critical care setting, and general nursing experience are displayed in Table 6 for the aggregate and by specialty ICU. A

large portion of the sample practiced in their current ICU for less than 2 years, had 4 years or less of critical care nursing experience, and less than 7 years of nursing experience at the time of the survey.

Table 6

Nurse Years in Current ICU, Critical Care, and Nursing Experience by Aggregate and Specialty ICU (N = 108)

ICU Nurse years	<i>Mdn</i>	<i>M(SD)</i>	IQR	Minimum	Maximum
Specialty ICU					
Aggregate	2.00	6.89(8.52)	8.88	.25	36
MICU	3.00	7.36(7.91)	10.50	.25	28
CVICU	1.75	3.72(4.87)	3.00	.25	20
SICU	8.00	10.68(9.44)	16.00	1.00	29
NICU	3.00	10.76(12.55)	22.63	.50	36
TICU	1.50	1.29 (.52)	.50	.25	2
Critical Care Nursing					
Aggregate	4.00	8.51(9.67)	10.00	.25	42
MICU	5.00	8.98(8.65)	13.00	.25	28
CVICU	3.00	4.55(5.23)	6.25	.25	24
SICU	8.00	12.55(12.01)	21.00	1.0	42
NICU	4.00	12.04(13.48)	22.63	.50	41
TICU	2.00	4.07(4.75)	3.50	.58	20
Nursing Experience					
Aggregate	7.00	11.60(10.78)	15.63	.25	43
MICU	7.00	12.77(10.99)	20.00	1.50	34
CVICU	4.25	6.68(6.17)	7.25	.25	27
SICU	10.00	15.47(12.25)	22.50	3.00	43
NICU	5.00	14.61(14.09)	23.00	.50	41
TICU	7.00	7.57(6.11)	8.50	.58	25

Measurement

Each tool included in the study is reviewed in the following section. Permissions are found in Appendix B. Family measures are presented first, followed by nurse measures. The reliability (Cronbach's alpha above .70) and validity of the instruments were acceptable in prior research (Polit, 2010). Reliability of instruments used in the current study follows the description of each measure.

Family Well-being. Family social, emotional and physical well-being was measured with the Family Well-being Index (FWBI), an 8-item instrument with items on a 10-point Likert

scale (H. I. McCubbin & Patterson, 1983a). The family member provides their level of concern with each item over the past month, with 0 (*not concerned at all*) to 10 (*very concerned*). For 6 of the items (1, 2, 5, 6, 7, and 8) the score must be reversed before summing (i.e. 0=10, 1=9) (H. I. McCubbin & Patterson, 1983a). The summative score was used in analysis. The total score for the tool ranges from 0 to 80, with higher scores indicating greater family well-being. Internal consistency was reported as an alpha of .85 in initial testing (H. I. McCubbin & Patterson, 1983a), and ranges from .75 to .85 in critical care nursing research (Leske, 2000, 2003; Leske & Brasel, 2010). Cronbach's alpha for the current study was .81.

Quality of Nursing Family Care. The variables under the umbrella of the quality of nursing family care included families' perception of family-centered care and nurse provided family social support. The quality of nursing family care was measured with two instruments.

Family-centered care (FCC). FCC was measured with the 20-item FCC-Adult Version instrument (Mitchell et al., 2012; Mitchell et al., 2009). This tool was first developed for use in pediatrics (Shields & Tanner, 2004), and was later adapted for use with adults (Mitchell et al., 2012; Mitchell et al., 2009). Each item is scored from 1 (*never*) to 4 (*always*) yielding ordinal level data, with a total possible score ranging from 20 to 80. Content validity was established with nursing experts. Construct validity was examined with exploratory factor analysis that demonstrated a 3-factor structure (Mitchell et al., 2012). However, Cronbach's alpha for factors 1 (.68), 2 (.76) and 3 (.35) was not adequate. Therefore, only total scores were used in analyses for the current study. Internal consistency ranges from an alpha of .81 (Mitchell et al., 2012) to .84 (Mitchell et al., 2009). Cronbach's alpha in the current study was .86.

Nurse provided family support. A modified version of the Social Support Scale of the Family Functioning, Family Health, and Social Support tool (FAFHES) (Astedt-Kurki et al.,

2009) was used to measure nurse provided family support. This measure was slightly modified (with permission) for the current study for use with families in critical care. The original social support scale was 20 items; however, 5 items were removed for the current study due to specificity to the cardiac population. One item was reworded for applicability to the ICU. The construct validity of the total FAFHES was confirmed with principal component analysis (Astedt-Kurki et al., 2009). The modified tool has 15 items, and each item is on a Likert type scale from 1 (*definitely disagree*) to 6 (*definitely agree*), with higher scores indicating greater perceived family support from nurses. The total possible score for the modified version ranges from 15 to 90, and total scores were used in analyses. Internal consistency for the social support scale ranges from an alpha of .82 (Hakio et al., 2015) to .98 (Astedt-Kurki et al., 2009) in prior research. Cronbach's alpha for the slightly modified scale used in the current study was .94.

ICU Climate of Care. There are three variables related to the ICU climate of care: ethical conflict, burnout, and nurse perception of organizational resources for ethical conflict. Each variable was measured with a separate instrument.

Ethical conflict. The Ethical Conflict in Nursing Questionnaire-Critical Care Version (ECNQ-CCV) (Falcó-Pegueroles et al., 2013) was used to measure ethical conflict. This tool has 19 items, each containing an ethical conflict. The nurse rates each item based on frequency of occurrence, with 0 (*never*), to 5 (*at least once per week*), and by the degree of the conflict, from 1 (*not at all problematic*) to 5 (*highly problematic*). Nurses select the type of moral response experienced based on provided definitions for moral indifference, moral well-being, moral uncertainty, moral dilemma, moral distress, and moral outrage. The tool provides a composite score (calculated as frequency x the degree of conflict for each item, then taking the sum of these for the 19 items) for ethical conflict called the Index of Exposure to Ethical Conflict (IEEC) that

ranges from 0 to 475 (0 = no exposure to ethical conflict and 475 = highest possible exposure) (Falcó-Pegueroles et al., 2013). Moral responses provided descriptive data. Ethical conflict frequency, degree and the IEEC score were used for preliminary analyses and the main research questions. Principal component analysis supports validity, and internal consistency for this tool is reported as an alpha of .88 in prior research (Falcó-Pegueroles et al., 2013). Cronbach's alpha for the current study was .90.

Burnout. The Maslach Burnout Inventory Human Services Survey (MBI-HSS) (Maslach et al., 1996) was used to measure nurse burnout. The tool has 22 items, and respondents determine how often from 0 (*never*) to 6 (*every day*) they experience each item (Maslach & Jackson, 1981). There are 3 subscales (emotional exhaustion, depersonalization, and personal accomplishment). Emotional exhaustion (EEMBI) measures exhaustion related to work, depersonalization (DMBI) measures a detached, impersonal response to recipients of treatment, and personal accomplishment (PAMBI) measures feelings of achievement in the work setting (Maslach et al., 1996). A high degree of Burnout is considered when there are high scores on the EEMBI and DMBI subscales, and low scores on the PAMBI subscale. An average degree of burnout is defined as moderate scores on all three subscales. Burnout is considered low when reported EEMBI and DMBI subscales are low and PAMBI scores are high (Maslach et al., 1996). The MBI instrument manual provides cutoff scores for each subscale indicating whether scores are low, moderate or high (Maslach et al., 1996). The PAMBI is not reverse scored, higher scores indicate greater levels of personal accomplishment (Maslach et al., 1996). There is no established overall score for burnout; thus, each subscale was used separately in analyses (EEMBI, DMBI, and PAMBI) (Maslach et al., 1996). Predictive validity was demonstrated with hypothesized relationships between MBI scores and selected outcomes (Maslach & Jackson,

1981). Internal consistency was reported as .90 for the EEMBI, .79 for the DMBI, and .71 for the PAMBI in prior research (Maslach et al., 1996). Cronbach's alpha was .93 for the EEMBI, .75 for the DMBI, and .77 for the PAMBI in the current study.

Nurse Perception of Organizational Resources for Ethical Conflict. The Hospital Ethical Climate Scale (HECS) (Olson, 1998) was used to measure organizational resources for ethical conflict. The scale included 26 items. Each response on the tool ranges from 1 (*almost never true*) to 5 (*almost always true*). The total score ranges from 26 to 130, with higher scores indicating a more positive ethical climate. Confirmatory factor analysis yielded a 5 factor model, with 5 subscales (nurse relationships with peers, nurse relationships with patients, nurse relationships with the hospital, nurse relationships with physicians, and nurse relationships with managers) (Olson, 1998). Subscale means were used to describe the sample; however, only the composite score was used in preliminary and primary analyses. Internal consistency is reported as an alpha of .91 for the total scale in prior research (Olson, 1998), and Cronbach's alpha was .91 in the current study.

Protection of Human Subjects

The current study was reviewed by the study site's Institutional Review Board (IRB) and qualified as low risk, as this was non-interventional, social sciences research in which nurses and family members completed surveys. A waiver of HIPAA was requested and granted for access to the patients' protected health information to screen patients for family inclusion in the study. Patient and family data were coded, and only the PI had access to the code that linked the patient/family data to a medical record number. This was kept in a locked office, in a locked cabinet, to which only the PI had access. All coded patient/family information will be destroyed

after 10 years (IRB standard). An alteration of consent process was requested and granted for the families and nurses in the study.

Family members received an alteration of consent form and participating family members signed twice; the first signature indicated they gave their permission to participate as a family member in the study, and the second signature provided their consent for the PI to access to the electronic medical record (EMR) of the patient. If the family member did not give permission for access the patient's EMR they were still allowed to participate in the study.

A letter describing the purpose of the research, procedures and participant rights was placed on the beginning of nurse instruments. Nurses were not asked to sign the alteration of consent form because their responses were anonymous. Completion of the survey signified consent to participate.

Procedures

Prior to recruitment of nurses and family members, ICU leaders and staff were notified about the study. After IRB approval, the PI attended staff meetings to make nurses and formal leaders aware of the study. A brief PowerPoint explaining the purpose of the study, nurse and family eligibility criteria, and recruitment procedures was presented. IRB approved flyers were posted in all five ICUs as a reminder about the study. The PI was the only data collector.

Family Recruitment

Each day of data collection, the PI reviewed unit log books to find patients who were admitted in the last 48 to 96 hours. This timeframe was selected because it gave the family exposure to at least 4 different nurses caring for their family member before participation. The PI examined patient care boards in nursing report rooms to determine the type and quantity of life support in place (patient on 2 or more life supportive treatments for families to qualify).

Additionally, the PI discussed patient status with the bedside nurse to assure accurate information about the current level of care.

Patients on 2 or more life-sustaining treatments were screened for family inclusion in the study. The PI used EMR information to calculate a patient SOFA score. An online calculator was used to obtain the SOFA value (ClinCalc, 2017) and required the following EMR information: FIO₂, PaO₂, presence of mechanical ventilation, platelet count, bilirubin, Glasgow Coma Score, Mean Arterial Blood Pressure, presence of vasopressors, quantity of vasopressors, creatinine and urine output within the last 24 hours. When calculating this score the worst values are utilized for each variable (ClinCalc, 2017).

Prior to approaching the family, the PI had a discussion with the primary nurse to determine the patient's spokesperson, and other potential family members for participation in the study. If family was not present, the PI's pager number was left with the nurse caring for the patient with directions to call when family was available. Family members participated within the timeframe of 48 to 96 hours of patient admission.

A log was created to track families that participated and declined. A range of 0 to 6 family members met inclusion criteria each week of the study. A total of 1 to 4 family members participated weekly during the duration of the study. This rate of family participation was consistent with prior experiences recruiting family members of critically ill patients for research (Leske, McAndrew, Evans, Garcia, & Brasel, 2012).

When families were approached for participation a general overview of the study, including risks and benefits was provided, as well as an explanation that involvement would require approximately 30 minutes of their time. Family members were given the alternation of consent form to review. If they decided to participate they signed the form twice. The first

signature indicated they gave their consent to participate as a family member in the study, and the second signature signified they provided consent for the PI to access the patient's EMR for the information outlined in the form. The critically ill patient population was not able to provide consent due to sedation and altered mental status.

Family members were given an iPad® to take the survey. This survey was administered through Qualtrics, a survey and data management system (Qualtrics, 2017). Family members were provided with verbal instructions on how to complete the survey on the iPad®. The researcher first entered a unique ID number for the family member. The family member then began the survey with the first screen showing written directions about survey contents to reinforce the PI's verbal directions. The survey included all family study instruments followed by a demographic information. Family members who were not comfortable completing the survey on the iPad® were given the option to take the survey on paper, or to have the researcher administer the survey to them and record their responses. Two family members requested the researcher enter their responses directly into Qualtrics on their behalf. All other family members independently completed the survey using the iPad®. Families were given 30 minutes to fill out study instruments before the PI returned to address any questions or concerns. Family members were given a \$10 gift card to their choice of two major retailers in appreciation for their time.

While the family completed study instruments, the PI collected the required information from the patient's EMR. Patient data were entered directly into Qualtrics (2017). Consent forms, the SOFA score, and hard copies of the patient data collection form were put into envelopes with the unique assigned ID number and placed into a locked cabinet.

The PI had ongoing dialogue with clinical staff to avoid consenting a family to the study during sensitive times, such as immediately after receiving a poor prognosis for their family

member. The PI's experience as a critical care nurse, clinical nurse specialist, and prior research experience with families in critical care assured appropriate timing during family member recruitment. Although the overall risk of harm was low, family members were offered hospital resources (clinical nurse specialist, social worker or nurse family expert from the patient relations team) if they requested further assistance or support after participation in the study. Three families utilized these resources.

Nurse Recruitment

Nurse recruitment was concurrent with family data collection. The study was presented at ICU unit staff meetings and Critical Care Nursing Council to increase awareness and encourage nursing participation. Information about the study was also placed in the hospital's nursing newsletter. Surveys were initially distributed electronically using Qualtrics software (2017), and later on paper to increase response rates. A mass email was sent out to ICU nurses that explained the study and inclusion criteria. There was a link to the survey that included the alteration of consent letter that explained the purpose of the study, that participation was voluntary, and nurses should only respond once. This letter also informed nurses they would receive a \$5 coffee store gift card in appreciation of their time. The three study instruments (ECNQ-CCV, MBI-HHS, and HECS) and a demographic sheet followed. At the end of the Qualtrics administered survey nurses had the option to provide an email address so an electronic link to the gift card could be sent by the PI. For nurses who completed the survey on paper, a detachable sheet was provided for the email address. Nurses placed this into a separate locked box so the email could not be linked to their individual survey. An electronic reminder was sent out weekly during the study. Paper surveys were distributed on nursing units and a locked

survey return box was placed in each ICU nursing work room. Return of survey instruments implied nurse consent. Responses rates were tracked for each ICU.

Nurses who participated in the study had access to organizational resources such as the employee assistance program (EAP) and nurse leaders who could direct nurses to additional resources in the event they experienced any distress after taking the survey. The number to contact EAP was provided in the nurse alteration of consent form.

Data Management

The log that linked the unique family and patient IDs to identifying information and signed alteration of consent forms was kept in a locked drawer that only the PI had a key and access to in a locked office. Electronic data were protected by a passcode on the PIs laptop, and with data encryption. All coded data were backed up on an encrypted external hard drive. All study data were entered directly into the Qualtrics (2017) software program and exported into IBM SPSS Statistics (version 23). The data management plan included the following steps:

1. Creation of a codebook that included a name, label, and possible values for each item.
2. Descriptive statistics were used to determine the frequency and percentage of missing values for each variable. The IBM SPSS Missing Value Analysis module was used to determine the pattern and type of missing data. Little's MCAR Chi-Square Test was calculated to determine if the data were missing completely at random (MCAR). Expectation Maximization (EM) imputation was used if the percentage of missing data was small (5% or less), and Little's MCAR was nonsignificant (Meyers, Gamst, & Guarino, 2013). EM, a single imputation technique, uses the mean vector and covariance matrix to predict incomplete variables from those that are observed (Enders, 2010). When possible, imputation rather than deletion techniques was used

for missing data because deletion techniques can lead to further reduction in sample size/power (Fox-Wasylyshyn & El-Masri, 2005).

3. Histograms, skew and kurtosis values were generated to determine whether each measure met the assumptions of the normal distribution. Outcome variables were checked for sufficient variability.
4. Assumptions for statistical tests were examined.
5. The PI kept an ongoing log to provide an audit trail of study decisions and rationale.

Planned Analyses

The following section outlines data analysis steps and procedures. All analyses were completed in IBM SPSS Statistics (version 23).

Preliminary analyses. To test for assumptions of normality, all continuous variables were analyzed using means, standard deviations, ranges, frequency distributions, histograms, skewness and kurtosis. Categorical variables were analyzed with frequencies and percentages.

Nurse and family data were examined to explore any possible differences in the various predictor and outcome variables by ICU type (1. Medical, 2. Neurosciences, 3. Surgical, 4. Cardiovascular, and 5. Transplant). For the family data, a one-way Analysis of Variance (ANOVA) was used to explore differences in family responses by family relationship.

A series of Analysis of Covariance (ANCOVA) were run using years in the ICU as the covariate with the type of ICU. Before testing each ANCOVA the homogeneity of regression (slope) assumption was tested to determine if a possible interaction between years in the current ICU and the type of ICU existed (Meyers et al., 2013). No interaction between the covariate and independent variable (ICU) was found, indicating the ANCOVA could be run.

Pearson product-moment correlations were conducted with the family variables followed by the nurse variables. After completing preliminary family and nurse analyses, nurse and family SPSS files were merged by type of ICU. Aggregate nurse scores for each ICU were matched to individual family members. Bivariate correlations of the combined nurse and family variables were used to guide selection of variables to address the main research questions. Table 7 provides a summary of preliminary analyses.

Main analyses. Hierarchical multiple regression was used to answer research questions one and two. First, the assumptions of hierarchical regression were examined. Variables were examined for multicollinearity. For predictors that were highly correlated ($r = .70$ or above), only the more theoretically relevant variable was used in subsequent analyses. Multicollinearity was also assessed using variation inflation factor (VIF) and tolerance values. The distribution of scores was examined with residual scatterplots to assure relationships between the variables did not violate the assumptions of 1) normality, 2) linearity, 3) homoscedasticity (Pallant, 2013).

Four models were generated. Predictors were entered in the order of theoretical importance. In the first model the outcome variable was family perception of FCC with the following steps for analysis: 1) step one: enter control variable nurse years in the current ICU 2) step two: enter nurse perception of organizational resources for ethical conflict. A second model for FCC was generated with the following steps for predictor entry: 1) step one: enter control variable nurse years in the current ICU 2) step two: enter depersonalization. Organizational resources and burnout were hypothesized to contribute the most significantly to family perceptions of nursing family care, so they were entered last in both models.

To examine family well-being as the outcome variable, two additional hierarchical regression models were generated. In the first family well-being model, family education was

entered as the control variable, and in the second step nurse years in the ICU was entered. In the second model, family education was entered as the control variable and organizational resources for ethical conflict was entered in the second step.

Each model was evaluated to determine how much of the variance in the outcome variable was explained by the model (adjusted R square), and each predictor variable's (coefficients) contributions to the model. Only predictors that were significant at an alpha level of .05 or less were used in subsequent analyses.

Based on the findings in the hierarchical regression analyses, research questions three and four were examined by testing for direct and indirect effects using the procedure outlined by Preacher and Hayes (2004) and A. F. Hayes (2013) for testing simple mediation models. This analysis was completed using the PROCESS macro in SPSS (A. F. Hayes, 2016). Sobel's test was not used due to the small sample size and the risk of a Type II error (A. F. Hayes, 2013). Direct and indirect effects were reported using bias corrected bootstrap confidence intervals (A. F. Hayes, 2013). Bootstrapping empirically generates a representative sampling distribution and calculates confidence intervals to determine the significance of the indirect effect (A. F. Hayes, 2013). Bootstrapping can accommodate for irregularity in sampling distributions and therefore, the value of bootstrapping is higher power for hypothesis testing than other mediation testing approaches (A. F. Hayes, 2013). Four path models were tested:

1. Nursing years in the current ICU on FCC through organizational resources
2. Organizational resources on FCC through depersonalization
3. Nursing years in the current ICU on family well-being through FCC
4. Organizational resources on family well-being through FCC

Table 8 includes a summary of the main research questions and statistical analyses performed.

Table 7

Preliminary Analyses.

Research Question	Unit of Analysis	Variable	Measurement	Statistical Test
Are there significant differences in the quality of nursing family care or well-being across specialty ICUs?	Family	IV: type of ICU DV: FCC, nurse provided family support and family well-being	Family characteristics: ICU FCC: Family-Centered Care Survey-Adult Version Nurse provided Family Support: Social Support Scale of Family Functioning, Family Health, and Social Support (FAFHES) instrument Family Well-being: Family Member Well-being Index	One-way ANOVAs
Are there significant differences in the quality of nursing family care or well-being by type of family relationship?	Family	IV: type family relationship DV: FCC, nurse provided family support and family well-being	Family characteristics: type of relationship (spouse/partner, parent, sibling, other) FCC: Family-Centered Care Survey-Adult Version Nurse provided Family Support: Social Support Scale of Family Functioning, Family Health, and Social Support (FAFHES) instrument Family Well-being: Family Member Well-being Index	One-way ANOVAs
Are there significant relationships among the family variables?	Family	IV: age and family education DV: FCC, nurse provided family support and family well-being	Family characteristics: age and educational level in years FCC: Family-Centered Care Survey-Adult Version Nurse provided Family Support: Social Support Scale of Family Functioning, Family Health, and Social Support (FAFHES) instrument	Pearson product-moment correlations (<i>r</i>)

Research Question	Unit of Analysis	Variable	Measurement	Statistical Test
Are there any differences in how nurses perceive the ICU climate of care variables by specialty ICU?	Nurse	<p>IV: type of ICU</p> <p>DV: ethical conflict frequency, degree, exposure to ethical conflict, emotional exhaustion, depersonalization, personal accomplishment, and organizational resources</p>	<p>Family Well-being: Family Member Well-being Index</p> <p>Nurse characteristics: ICU</p> <p>Ethical conflict frequency, degree and exposure to ethical conflict: Ethical Conflict Questionnaire: Critical Care Version (ECNQ-CCV)</p> <p>Burnout: Maslach Burnout Inventory-Human Services Survey (MBI-HSS)</p> <p>Organizational resources: Hospital Ethical Climate Scale (HECS)</p>	One-way ANOVAs
Are there any differences in how nurses perceive the ICU climate of care variables by specialty ICU when nurse years in the ICU is used as a covariate?	Nurse	<p>IV: type of ICU</p> <p>Covariate: years in current ICU</p> <p>DV: ethical conflict frequency, degree, exposure to ethical conflict, emotional exhaustion, depersonalization, personal accomplishment, and organizational resources</p>	<p>Nurse characteristics: ICU, years in current ICU</p> <p>Ethical conflict frequency, degree and exposure to ethical conflict: Ethical Conflict Questionnaire: Critical Care Version (ECNQ-CCV)</p> <p>Burnout: Maslach Burnout Inventory-Human Services Survey (MBI-HSS)</p> <p>Organizational resources: Hospital Ethical Climate Scale (HECS)</p>	ANCOVAs
Are there are significant relationships among the ICU climate of care variables?	Nurse	<p>IV: years in the current ICU</p> <p>DV: ethical conflict frequency, degree, exposure to ethical conflict,</p>	<p>Nurse characteristics: years in current ICU</p> <p>Ethical conflict frequency, degree and exposure to ethical conflict: Ethical Conflict Questionnaire: Critical Care Version (ECNQ-CCV)</p>	Pearson product-moment correlations (<i>r</i>)

Research Question	Unit of Analysis	Variable	Measurement	Statistical Test
		emotional exhaustion, depersonalization, personal accomplishment, and organizational resources	<p>Burnout: Maslach Burnout Inventory-Human Services Survey (MBI-HSS)</p> <p>Organizational resources: Hospital Ethical Climate Scale (HECS)</p>	
Are there significant relationships among the ICU climate of care variables, quality of nursing family care variables, and family well-being?	Nurse and family	<p>IV: nurse years in the current ICU, family age, family educational level</p> <p>DV: ethical conflict frequency, degree, exposure to ethical conflict, emotional exhaustion, depersonalization, personal accomplishment, and organizational resources, FCC, nurse provided family support and family well-being</p>	<p>Family characteristics: age, educational level</p> <p>Nurse characteristics: years in current ICU</p> <p>FCC: Family-Centered Care Survey-Adult Version</p> <p>Nurse provided Family Support: Social Support Scale of Family Functioning, Family Health, and Social Support (FAFHES) instrument</p> <p>Family Well-being: Family Member Well-being Index</p> <p>Ethical conflict frequency, degree and exposure to ethical conflict: Ethical Conflict Questionnaire: Critical Care Version (ECNQ-CCV)</p> <p>Burnout: Maslach Burnout Inventory-Human Services Survey (MBI-HSS)</p> <p>Organizational resources: Hospital Ethical Climate Scale (HECS)</p>	Pearson product-moment correlations (<i>r</i>)

Table 8

Main Research Questions and Analyses

Research Question	Unit of Analysis	Variable	Measurement	Statistical Test
1. To what extent and in what manner is family members' perception of the quality of nursing family care predicted by the ICU climate of care variables?	Nurse and Family	Control variable: nurse years in current ICU Predictors: Organizational Resources, Depersonalization Outcome variable: FCC	Nurse characteristics: years in current ICU Burnout: Maslach Burnout Inventory-Human Services Survey (MBI-HSS) Organizational resources: Hospital Ethical Climate Scale (HECS) FCC: Family-Centered Care Survey-Adult Version	Hierarchical Multiple Regression
2. To what extent and in what manner is family members' well-being predicted by quality of family care and ICU climate of care variables?	Nurse and Family	Control variable: family education Predictors: nurse years in current ICU and organizational resources Outcome variable: family well-being	Nurse characteristics: years in current ICU Family characteristics: years of education Organizational resources: Hospital Ethical Climate Scale (HECS) Family Well-being: Family Member Well-being Index	Hierarchical Multiple Regression
3. What are the direct and indirect effects of the ICU climate of care variables on the quality of nursing family care?	Nurse and Family	Predictors: 1. nurse years in current ICU 2. organizational resources Mediator: 1. organizational resources 2. depersonalization	Nurse characteristics: years in current ICU Organizational resources: Hospital Ethical Climate Scale (HECS) Burnout: Maslach Burnout Inventory-Human Services Survey (MBI-HSS)	Multiple regression to estimate direct and indirect effects (A. F. Hayes, 2016)

		Outcome: FCC	FCC: Family-Centered Care Survey-Adult Version	
4. What are the direct and indirect effects of the climate of care variable and quality of nursing family care on family well-being?	Nurse and Family	Predictors: 1. nurse years in current ICU 2. organizational resources Mediator: FCC Outcome: family well-being	Nurse characteristics: years in current ICU FCC: Family-Centered Care Survey-Adult Version Organizational resources: Hospital Ethical Climate Scale (HECS) Family Well-being: Family Member Well-being Index	Multiple regression to estimate direct and indirect effects (A. F. Hayes, 2016)

Chapter Summary

In this chapter study methods, including participant recruitment, procedures, and analyses were addressed for this descriptive, cross-sectional, correlational study. Sample characteristics and reliabilities of instruments used in the current study were presented. Chapter IV provides the findings from preliminary analyses and the results of the main research questions.

CHAPTER IV

RESULTS

Missing data analysis, descriptive statistics, preliminary analyses, and the results of the main research questions are presented in this chapter. Content is organized by research questions and related hypotheses presented in Chapter III.

Missing Data Analysis

The percentage of missing data was less than 5% overall (3% for nurses and 4% for family members). For all quantitative variables, Little's MCAR Chi-Square Test was non-significant, indicating the data were missing completely at random (MCAR) (Meyers et al., 2013). Expectation Maximization (EM), a single imputation technique was used for missing nurse and family data.

For family members, 63.6% of the sample completed the entire FCC scale, 22.7% did not complete one item, and 11.4% missed between 3 to 5 items. For the nurse provided family support scale 84.1% completed the entire tool, 11.4% missed one item and 4.6% missed between 2 and 6 items. For well-being 97.7% of the family members completed all the items, with 2.3% of respondents missing 2 items.

For nurses, 79.3% of respondents answered all the questions on the ECNQ-CCV, 16.4% missed one item, and 3.5% missed between 3 to 8 items. One respondent missed 47 items and this case was deleted. For the MBI-HHS, 92.2% completed all items, with 3.5% missing between 2 to 6 items. On the HECS 90.5% of the nurse sample completed all items and 4.3% missed one item.

Descriptive Data Analysis

Family. Means and standard deviations are reported for the family aggregate and by ICU for family instruments in Table 9. Overall, family members reported high levels of FCC and nurse provided family support, and moderate levels of well-being. When FCC scores were examined by specialty ICU, the CVICU had the highest scores, followed by the NICU, TICU, SICU and MICU. For nurse provided family support the NICU had the highest score, followed by the CVICU, TICU, SICU and MICU. The SICU had the highest family well-being scores, followed by the TICU, CVICU, NICU and MICU. Skew was examined for the family outcome variables of FCC and well-being and was within an acceptable range. There was a significant negative skew for nurse provided family support; however, it was not used as a dependent variable in analyses.

Table 9

Mean, Standard Deviation and Range for Family Variables

Variable	Group	<i>n</i>	M(SD)	Range	Cronbach's α
Family-centered care (FCC)	Aggregate	44	69.86(7.80)	52-80	.86
	MICU	13	66.52(8.32)	52-79	
	CVICU	8	75.12(2.64)	71-78	
	SICU	8	67.58(9.51)	54-78	
	NICU	2	74.00(4.24)	71-77	
	TICU	9	72.37(4.95)	63-80	
Nurse Provided Family Support	Aggregate	44	82.41(8.58)	55-90	.94
	MICU	13	80.13(7.26)	63-90	
	CVICU	8	85.53(5.41)	75-90	
	SICU	8	82.13(12.0)	55-90	
	NICU	2	89.00(1.41)	88-90	
	TICU	9	85.00(6.72)	71-90	
Well-being	Aggregate	44	40.64(14.92)	13-72	.81
	MICU	13	32.46(9.77)	13-46	
	CVICU	8	39.50(15.07)	13-59	
	SICU	8	54.10(13.61)	27-71	
	NICU	2	37.00(14.14)	27-47	
	TICU	9	42.44(17.07)	28-72	

Family instruments were examined at the item level to determine specific aspects of nursing care and well-being perceived as strong, and those rated lower by family members. For FCC, the highest scoring item was '*I have a right to question medical and allied health recommendations*' ($M = 3.93, SD = .255$), and the lowest scoring item was '*family presence during procedures*' ($M = 2.97, SD = .922$). For the nurse provided family support variable families rated '*nurse compassion*' highest ($M = 5.73, SD = .499$), and the lowest scoring items included: '*interest in family affairs*' ($M = 5.32, SD = 1.00$), '*nurse encouragement*' ($M = 5.31, SD = 1.00$), and '*counseling related to care of the critically ill family member*' ($M = 5.25, SD = .886$). The well-being item of least concern was anger ($M = 7.26, SD = 2.6$), and the greatest worry was the health of their family member ($M = 3.09, SD = 3.31$).

Nurse. Overall nurses reported moderate ethical conflict, with higher scores for the degree of conflict than frequency. Emotional exhaustion (EEMBI) and depersonalization (DMBI) scores were high; however, personal accomplishment (PAMBI) scores also were high. Nurse reported organizational resources for ethical conflict (HECS) were moderate, and of the organizational resources subscales peer support ($M = 4.28, SD = .41$) was rated the highest, followed by nurse manager support ($M = 3.76, SD = .90$), support for patient care ($M = 3.67, SD = .49$), hospital support for nurses ($M = 3.40, SD = .56$), and nurse-physician collaboration ($M = 3.40, SD = .59$). When examining nurse descriptive statistics by specialty ICU, the NICU had the highest mean score for frequency of ethical conflict, and the TICU for the degree of conflict. The NICU, followed by the TICU had the highest exposure to ethical conflict. The TICU had the highest emotional exhaustion scores, and the MICU the highest depersonalization scores. The NICU had the highest personal accomplishment scores, and the CVICU the highest overall scores for organizational resources for ethical conflict. The TICU had the lowest scores ($M =$

2.82, $SD = .56$) for nurse-physician collaboration. Descriptive statistics for the nurse variables are shown in Table 10.

Table 10

Mean, Standard Deviation, and Range for Nurse Variables.

Variable	Group	<i>n</i>	<i>M(SD)</i>	Range	Cronbach's α
Ethical Conflict Frequency	Aggregate	115	56.92(13.47)	21-95	.86
	MICU	35	56.85(13.78)	21-80	
	CVICU	22	54.71(11.86)	36-78	
	SICU	22	55.78(12.87)	32-80	
	NICU	14	63.40(12.17)	44-95	
	TICU	15	59.41(16.17)	28-84	
Ethical Conflict Degree	Aggregate	115	64.86(13.68)	26-95	.90
	MICU	35	63.84(14.95)	26-92	
	CVICU	22	67.75(9.59)	49-82	
	SICU	22	60.92(14.90)	37-85	
	NICU	14	66.86(12.71)	46-95	
	TICU	15	68.25(13.46)	40-87	
Exposure to Ethical Conflict	Aggregate	115	209.64(72.59)	40-475	.90
	MICU	35	209.12(74.00)	40-324	
	CVICU	22	204.98(55.27)	121-308	
	SICU	22	201.65(76.42)	92-331	
	NICU	14	230.14(80.63)	142-475	
	TICU	15	227.12(82.93)	100-336	
Emotional Exhaustion (EEMBI)	Aggregate	111	34.34(11.73)	15-63	.93
	MICU	35	36.46(11.97)	19-63	
	CVICU	22	30.45(9.43)	15-51	
	SICU	21	33.04(11.27)	15-60	
	NICU	14	33.36(14.11)	17-63	
	TICU	14	39.14(11.26)	16-52	
Depersonalization (DMBI)	Aggregate	111	15.45(6.53)	5-35	.75
	MICU	35	17.17(6.71)	5-32	
	CVICU	22	13.31(6.01)	5-28	
	SICU	21	17.04(6.16)	8-27	
	NICU	14	15.14(8.06)	7-35	
	TICU	14	13.71(4.33)	8-22	
Personal Accomplishment (PAMBI)	Aggregate	111	44.97(6.84)	26-56	.77
	MICU	35	43.79(7.29)	26-55	
	CVICU	22	46.00(4.68)	37-53	
	SICU	21	44.19(6.73)	27-55	
	NICU	14	49.07(5.30)	38-56	
	TICU	14	44.28(8.90)	31-55	

Variable	Group	<i>n</i>	<i>M</i> (<i>SD</i>)	Range	Cronbach's α
Organizational Resources (HECS)	Aggregate	110	94.99(12.16)	57-130	.91
	MICU	35	88.52(12.42)	57-107	
	CVICU	22	101.86(9.10)	86-130	
	SICU	21	97.30(10.24)	80-116	
	NICU	14	98.93(12.77)	72-129	
	TICU	14	92.86(11.25)	71-116	

Note. Some nurses did not report their specialty ICU. The values are $n = 108$ for Ethical conflict (Frequency, degree and exposure) and $n = 106$ for burnout (emotional exhaustion, depersonalization, and personal accomplishment) and organizational resources by specialty ICU.

Overall, moral distress had the highest percentage of responses for the type of ethical conflict, followed closely by moral outrage. Moral distress had the highest number of respondents for the following three conflicts: ‘*administering treatments that are too aggressive and cause patient suffering*’ ($n = 57, 49.6\%$), ‘*unnecessary tests for a terminal illness*’ ($n = 53, 46.1\%$), and ‘*inadequate sedation and analgesia*’ ($n = 49, 42.6\%$). The highest scoring item for the frequency of conflict was ‘*caring for a patient who should be on a ward*’ ($M = 4.23, SD = .90$), and ‘*carrying out family wishes that clash with the patient*’ ($M = 4.31, SD = .89$) for the degree of conflict. The highest ethical conflict exposure was ‘*inadequate analgesia and sedation*’ ($M = 17.29, SD = 6.37$).

Preliminary Analyses Family Members

RQ: Are there significant differences in the quality of nursing family care or well-being across specialty ICUs?

A series of one-way Analysis of Variance (ANOVA) were run using each family variable (FCC, nurse support and well-being) as the outcome with specialty ICU as the independent variable (Table 11). Each ICUs means and standard deviations are found in Table 8. There were significant differences for FCC and family well-being by type of ICU; however, not for nurse provided family support. Tukey’s HSD was used to determine the significance of comparisons. For FCC, there was a significant difference ($p = .036$) between the CVICU ($M = 75.12, SD =$

2.64) and MICU ($M= 66.52, SD = 8.32$), indicating the CVICU had higher family reported FCC. For family well-being, there was a significant difference ($p = .017$) between the SICU ($M = 54.1, SD = 13.61$) and the MICU ($M = 32.46, SD = 9.77$), indicating families reported higher well-being scores in the SICU.

Table 11

One-Way ANOVAs for the Effects of ICU on FCC, Nurse Provided Family Support, and Family Well-being

Family Outcome Variable		SS	MS	$F(4,39)$	p	η^2
FCC	Between	603.28	150.82	2.19	.033	.23
	Within	2014.81	51.66			
Nurse provided family support	Between	405.33	101.33	1.43	.242	.13
	Within	2762.09	70.82			
Well-being	Between	2148.78	537.19	2.82	.038	.22
	Within	7419.09	190.23			

RQ: Are there significant differences in the quality of nursing family care or well-being by type of family relationship?

A series of one-way Analysis of Variance (ANOVA) were run using each family variable (FCC, nurse support and well-being) as the outcome with family relationship (spouse/partner, parent, sibling, child and other) as the independent variable (Table 12). There were no significant differences in family mean scores for any of the measures based on the type of relationship with the critically ill patient. Means and standard deviations by the type of family relationship are found in Table 13.

Table 12

One-Way ANOVAs for the Effects of Type of Family Relationship on FCC, Nurse Provided Family Support and Family Well-being

Family Outcome Variable	SS	MS	<i>F</i> (4,39)	<i>p</i>	η^2
FCC					
Between	280.13	70.32	1.17	.340	.10
Within					
Nurse provided family support					
Between	167.39	41.85	.54	.704	.05
Within	3000.02	76.92			
Well-being					
Between	1019.10	254.78	1.16	.342	.11
Within	8548.76	219.20			

Table 13

Means and Standard Deviations for Type of Family Relationship on Family Measures

Variable	<u>Partner</u>		<u>Child</u>		<u>Parent</u>		<u>Sibling</u>		<u>Other</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
FCC	72.34	6.58	65.12	10.17	69.71	9.77	68.57	5.09	69.49	5.62
Family Support	84.21	8.93	79.13	9.78	81.84	8.07	80.84	9.49	84.53	2.20
Well-being	41.33	15.71	42.00	11.23	46.33	14.72	30.62	10.50	39.67	24.44

RQ: Are there significant relationships among the family variables?

Pearson product-moment correlation coefficients were calculated for the family variables (Table 14). Among the family variables, FCC and nurse provided family support were highly correlated ($r = .72$). No other significant correlations among family variables were found.

Although conceptually nurse provided family support and FCC are different, only FCC was used as an indicator of the quality of nursing family care in analyses related to the main research

questions. This decision was made because of the potential for multicollinearity, and lack of variability in this measure.

Table 14

Intercorrelations for Family Variables, Age and Educational Level

Measure	Education	Age	FCC	Nurse Support	Well-being
Education					
Age	-.25				
FCC	.07	.25			
Nurse support	.29	.11	.72**		
Well-being	-.12	.21	-.03	.12	

** $p = .01$

Note. Education = family years of education.

Preliminary Analyses Nurses

RQ: Are there any differences in how nurses perceive the ICU climate of care variables by specialty ICU?

A series of one-way Analysis of Variance (ANOVA) were run using each nurse variable as the outcome with specialty ICU as the independent variable (Table 15). Each ICUs means and standard deviations are found in Table 9. Tukey’s HSD was used to determine the significance of comparisons. The MICU HECS score ($M = 88.52, SD = 12.41$) was significantly lower ($p = <.001$) than the CVICU ($M = 101.86, SD = 9.1$), SICU ($M = 97.3, SD = 10.24$), $p = .045$, and NICU ($M = 98.93, SD = 12.77$), $p = .034$.

RQ: Are there any differences in how nurses perceive the ICU climate of care variables by specialty ICU when using nurse years in the ICU as a covariate?

A series of one-way ANCOVAs were conducted using years in the current ICU as a covariate, and specialty ICU as an independent variable for all nurse measures. A preliminary analysis evaluating the homogeneity-of-regression (slopes) assumption indicated no interaction between the covariate and the ICU for the frequency of ethical conflict ($F(4, 108) = 1.29, p = .278$), degree of ethical conflict ($F(4, 108) = 1.56, p = .190$), exposure to ethical conflict ($F(4,$

108) = 1.675, $p = .162$), emotional exhaustion ($F(4, 108) = 2.02, p = .098$), depersonalization ($F(4, 108) = .779, p = .541$), personal accomplishment ($F(4, 108) = 1.94, p = .111$), and organizational resources ($F(4, 108) = 1.95, p = .108$). As shown in Table 16, the covariate (years in the current ICU) was significant for the frequency of ethical conflict and exposure to ethical conflict. Nurse years in the current ICU and specialty ICU both were significant for depersonalization; however, the effect size was small (Cohen, 1988). The ICU was significant for organizational resources and had a large effect size (Cohen, 1988). In post hoc testing using the Bonferroni, the MICU ($M = 17.17, SD = 6.71$) had significantly higher depersonalization scores (after controlling for years in the current ICU) than the CVICU ($M = 13.31, SD = 6.01$), $p = .049$. For organizational resources for ethical conflict the CVICU ($M = 101.85, SD = 9.09$) had significantly higher scores than the MICU ($M = 88.52, SD = 12.41$), $p < .001$. The means, adjusted means, and adjusted mean differences are shown in Table 17.

Table 15

One-Way ANOVAs for the Effects of ICU on Ethical Conflict Frequency, Degree, Exposure to Ethical Conflict, Emotional Exhaustion, Depersonalization, Personal Accomplishment and Organizational Resources

Nurse Outcome Variable	SS	MS	$F(4, 101)$	p	η^2
Ethical Conflict Frequency					
Between	835.68	208.92	1.85	.322	.04
Within	18157.85	176.29			
Ethical Conflict Degree					
Between	772.11	193.03	1.06	.381	.03
Within	18798.09	182.51			
Exposure to Ethical Conflict					
Between	13643.41	3410.85	.64	.633	.02
Within	545830.89	5299.33			
Emotional Exhaustion					
Between	858.64	214.66	1.6	.179	.05
Within	13517.37	133.84			

Nurse Outcome Variable	SS	MS	<i>F</i> (4, 101)	<i>p</i>	η^2
Depersonalization					
Between	297.52	74.38	1.82	.132	.07
Within	4138.03	40.97			
Personal Accomplishment					
Between	325.76	81.44	1.80	.135	.07
Within	4571.58	45.26			
Organizational Resources					
Between	2893.10	723.27	5.69	<.001	.18
Within	12842.18	127.15			

Note. For the intensity, degree, and exposure to ethical conflict *df* = 4, 103.

Table 16

ANCOVA for Ethical Conflict Frequency, Degree, Exposure to Ethical Conflict, Emotional Exhaustion, Depersonalization, Personal Accomplishment, and Organizational Resources as a Function of Specialty ICU, With Years in Current ICU as Covariate

Nurse Outcome Variable	Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
Frequency of Ethical Conflict	Covariate	1	1086.94	1086.94	6.50	.012	.060
	ICU	4	1103.89	275.97	1.65	.168	.061
	Error	102	17070.91	167.36			
	Total	108	376196.32				
Degree of Ethical Conflict	Covariate	1	3.07	3.07	.02	.898	.000
	ICU	4	673.56	168.39	.91	.459	.035
	Error	102	18795.02	184.27			
	Total	108	480170.43				
Exposure to Ethical Conflict	Covariate	1	21473.95	21473.95	4.18	.044	.039
	ICU	4	13813.55	3453.39	.67	.613	.026
	Error	102	524356.94	5140.75			
	Total	108	5450437.61				
Emotional Exhaustion	Covariate	1	258.70	258.7	1.95	.166	.019
	ICU	4	817.33	204.33	1.54	.196	.058
	Error	100	13258.68	132.59			
	Total	106	140408.02				
Depersonalization	Covariate	1	453.15	453.15	12.29	.001	.110
	ICU	4	526.93	131.73	3.58	.009	.125
	Error	100	3684.88	36.85			
	Total	106	30305.48				

Nurse Outcome Variable	Source	df	SS	MS	F	p	η^2
Personal Accomplishment	Covariate	1	34.29	34.29	.76	.387	.008
	ICU	4	312.07	78.02	1.72	.152	.064
	Error	100	4537.29	45.37			
	Total	106	220402.31				
Organizational Resources	Covariate	1	68.46	68.46	.54	.466	.005
	ICU	4	2910.50	727.63	5.70	.001*	.186
	Error	100	12773.72	127.73			
	Total	106	971904.66				

* $p < .001$

Table 17

Pairwise Comparisons for Depersonalization and Organizational Resources

Outcome Variable	Group	Mean	Adjusted Mean	MICU	CVICU	SICU	NICU	TICU
Depersonalization	MICU	17.32	17.31					
	CVICU	12.50	12.50	-4.82*				
	SICU	17.94	17.90	0.63	5.44			
	NICU	16.10	16.10	-1.13	-3.69	-1.75		
	TICU	12.24	12.25	-5.07	-.26	-5.70	-3.95	
Organizational Resources	MICU	88.52	88.46					
	CVICU	101.85	102.17	13.71**				
	SICU	97.30	96.95	8.48	-5.23			
	NICU	98.93	98.52	10.06	-3.65	1.58		
	TICU	92.85	93.43	4.96	-8.75	-3.52	-5.10	

* $p < .05$, ** $p < .001$

RQ: Are there significant relationships among the ICU climate of nursing care variables?

Pearson product-moment correlation coefficients were calculated for nurse variables (Table 18). The frequency of ethical conflict was positively related to emotional exhaustion ($r = .49, p = .01$), and depersonalization ($r = .33, p = .01$). The degree of conflict was only related to emotional exhaustion ($r = .28, p = .01$). Exposure to ethical conflict was negatively related to organizational resources ($r = -.22, p = .05$), and positively related to emotional exhaustion ($r = .552, p = .01$), and depersonalization ($r = .32, p = .01$). Negative relationships

were found between emotional exhaustion and personal accomplishment ($r = -.31, p = .01$), and organizational resources ($r = -.38, p = .01$). Similarly, there were negative relationships between depersonalization and personal accomplishment ($r = -.34, p = .01$), and organizational resources ($r = -.26, p = .01$). Personal accomplishment was positively related to organizational resources ($r = .46, p = .01$).

Table 18

Intercorrelations for Nurse Variables and Nurse Years in the Current ICU

Measure	ICUYears	Frequency	Degree	IIEC	EEMBI	DMBI	PAMBI	HECS
ICUYears								
Frequency	-.06							
Degree	-.17	.53**						
IIEC	-.08	.91**	.76**					
EEMBI	-.06	.49**	.28**	.55**				
DMBI	.16	.33**	.04	.32**	.53**			
PAMBI	-.06	-.08	.07	-.04	-.31**	-.34**		
HECS	.05	-.24*	-.11	-.22*	-.38**	-.26**	.46**	

* $p = .05$, ** $p = .01$

Note. ICUYears = Nursing years in current ICU, IIEC = exposure to ethical conflict, EEMBI = emotional exhaustion, DMBI = depersonalization, PAMBI = personal accomplishment, HECS = organizational resources for ethical conflict.

Preliminary Analyses Family Members and Nurses

RQ: Are there significant relationships among the ICU climate of nursing care variables, quality of nursing family care variables, and family well-being?

Pearson Product-Moment Correlation Coefficients were calculated for the combined family and nurse variables (Table 19). The correlation coefficients guided variable selection for the main research questions. Positive relationships were found between family years of education and nurse personal accomplishment ($r = .34, p = .05$), and between FCC and the degree of conflict ($r = .40, p = .01$), personal accomplishment ($r = .35, p = .05$), and organizational resources ($r = .37, p = .05$). A negative correlation was found between FCC and depersonalization ($r = -.46, p = .01$), and a positive correlation between nurse years in the current

ICU and depersonalization ($r = .62, p = .01$). Nurse years in the current ICU was positively related to family well-being ($r = .36, p = .05$), and negatively related to the degree of conflict ($r = -.83, p = .01$), and IEEC score ($r = -.52, p = .01$). Significant relationships among the ICU climate of care and FCC were found, and between nurse years and family well-being. Based on theoretical underpinnings, as well as the correlational relationships found in preliminary analyses, the predictor variables used to answer the main research questions included depersonalization, organizational resources, nurse years in the current ICU, and outcome variables were FCC and family well-being.

Table 19

Intercorrelations for Nurse and Family Variables

Measure	Fam Ed	Fam Age	FCC	Sup	FWB	Freq	Degree	IEEC	EE	Dep	PA	HECS	NY
Fam Ed													
Fam Age	-.25												
FCC	.07	.25											
Sup	.29	.11	.72**										
FWB	-.12	.21	-.03	.12									
Freq	.26	-.15	.06	.14	-.04								
Degree	-.08	.17	.40**	.25	-.14	.42**							
IEEC	.09	-.04	.16	.18	-.06	.92**	.69**						
EE	-.08	-.10	-.18	-.09	-.10	.67**	.17	.70**					
Dep	.09	-.23	-.46**	-.30	.02	-.16	-.92**	-.45**	.16				
PA	.34*	.02	.35*	.28	-.04	.20	.42**	.14	-.57**	-.54**			
HECS	.08	.17	.37*	.27	.21	-.29	.28	-.21	-.81**	-.61**	.72**		
NY	.11	-.11	-.24	-.09	.36*	-.29	-.83**	-.52**	-.27	.62**	-.23	.11	

* $p = .05$, ** $p = .01$

Note. Fam Ed = family education in years, Fam age = family member age in years, Sup = nurse provided support, FWB = Family Well-being, Freq = frequency of ethical conflict, Degree = degree of ethical conflict, IEEC = exposure to ethical conflict, EE = emotional exhaustion, Dep = depersonalization, PA = personal accomplishment, HECS = organizational resources for ethical conflict, NY = nurse years in the current ICU.

Main Research Questions

RQ 1: To what extent and in what manner is family members' perception of the quality of nursing family care predicted by the ICU climate of care variables?

Hierarchical multiple regression analysis was used to determine the relative contribution of variables predicting FCC. Theoretically, organizational resources and depersonalization were both thought to contribute to the delivery of FCC. Two models were generated using FCC as the outcome variable. Organizational resources and depersonalization were not entered into the same model due to a relatively high correlation ($r = -.61, p = .01$). In the first model nurse years in the current ICU was entered as a control variable, followed by organizational resources. In the second model the control remained the same and the second predictor was depersonalization.

The FCC variable had a normal distribution, with few extreme outliers. Multicollinearity was assessed with variation inflation factor (VIF) and tolerance values. VIF values were well below 10 and tolerance well above .2 indicating multicollinearity was not a problem in the models (Meyers et al., 2013; Pallant, 2013). A Durbin-Watson statistic was generated for to assess whether or not the assumption of independent errors was met (Durbin & Watson, 1951). These values were 1.89 for Model 1 and 1.94 for Model 2. The test statistic was above the upper limit of the significance point of the Durbin-Watson significance tables, suggesting non-autocorrelation and the assumption of independent errors was not violated (Durbin & Watson, 1951).

The hierarchical regression analysis summary for models 1 and 2 is shown in Table 20. Both models significantly predicted FCC (Model 1, $F(2, 41) = 5.641, p = .007$, Model 2, $F(2, 41) = 5.655, p = .007$). Model 1 explained 21.6% of the variance in FCC when nurse years was entered as a control variable, followed by organizational resources for ethical conflict. Model 2 also explained 21.6% of the variance in FCC when nurse years was entered as a control followed by depersonalization. In model 1, organizational resources ($\beta = .401$) explained more of the variance in FCC than nurse years in the current ICU ($\beta = -.281$); however, both made statistically

significant contributions to the model. Notably, as years of nursing experience increases, there is a decrease in the FCC outcome variable. As organizational resources increase, FCC also increases. Organizational resources uniquely explained 15.9% of the variance (semipartial correlation coefficient = .399), and nurse years in the current ICU only 7.7% (semipartial correlation coefficient = -.279) in FCC.

In model 2, depersonalization ($\beta = -.511$) explained more of the variance in FCC than years in the current ICU ($\beta = .080$). The model suggests that as depersonalization scores decrease, FCC increases. However, in this model nurse years in the current ICU ($\beta = .080$) was not significant. Depersonalization uniquely explained 16% of the variance in FCC (semipartial correlation coefficient = -.40), and years in the current ICU less than 1% (semipartial correlation coefficient = .063). Organizational resources for ethical conflict and depersonalization were both significant predictors of FCC. Therefore, these findings were the basis of the decision to explore direct and indirect relationships among the organizational resources, depersonalization and years in the current ICU with FCC as the outcome variable to answer research question 3.

Table 20

Hierarchical Regression Analysis Summary for Nurse Years in Current ICU, Depersonalization, and Organizational Resources Predicting FCC (N=44)

Model	Step and Predictor Variable	B	SE B	β	R ²	Adj R ²	ΔR^2	t	p
1	Step 1: Nurse years in ICU	-.803	.507	-.238	.056	.034	.056	-1.59	.12
	Step 2: Nurse years in ICU	-.949	.470	-.281				-.20	.05
	Organizational Resources	.598	.207	.401	.216	.178	.159	2.89	.006
2	Step 1: Nurse years in ICU	-.803	.507	-.238	.056	.034	.056	-1.59	.12
	Step 2: Nurse years in ICU	.271	.597	.080				.45	.652
	Depersonalization	-2.250	.777	-.511	.216	.178	.16	-2.89	.006

RQ 2: To what extent and in what manner is family members' well-being predicted by quality of family care and ICU climate of care variables?

Hierarchical multiple regression also was used to determine the contribution of variables

predicting family well-being. Correlational analysis of nurse and family variables guided the selection of variables in models 3 and 4. Family education level was entered as a control variable in both models. Theoretically, family well-being is partially determined by existing family resources (M. A. McCubbin & McCubbin, 1993). In model 3, the second predictor entered was nurse years in the current ICU ($r = .36, p = .01$). In model 4 the predictor was organizational resources for ethical conflict. The organizational resources variable was selected because of its predictive value in FCC, and because organizational resources and family well-being had the largest Pearson Correlation Coefficient ($r = .21$) following nurse years in the current ICU.

The family well-being variable had a normal distribution, with few extreme outliers. Multicollinearity was assessed with VIF and tolerance values. There were no violations of the multicollinearity assumptions in models 3 and 4. The Durbin-Watson statistic values were 1.832 and 1.796, above the upper limit of 1.66, indicating the assumption of independent errors was met (Durbin & Watson, 1951).

The hierarchical regression analysis summary of models 3 and 4 is shown in Table 21. Only model 3 significantly predicted family well-being ($F(2, 37) = 3.576, p = .038$) and explained 16.2% of the variance in the outcome variable. Nurse years in the current ICU was the only significant predictor ($\beta = .387$), and uniquely explained 14.8% (semipartial correlation coefficient = .385) of the variance in family well-being. The model suggests that as nurse years in the ICU increase, family well-being also increases. Model 4 did not predict family well-being ($F(2, 37) = 1.86, p = .17$); however, the relationship between organizational resources and family well-being was positive and in the expected direction ($\beta = .269$). Nurse years in the current ICU was the only variable predictive of family well-being. In the context of these findings and using

the conceptual framework as a guide, organizational resources, years in the current ICU, and FCC were examined with the outcome variable of family well-being to determine direct and indirect relationships to answer research question 4.

Table 21

Hierarchical Regression Analysis Summary for Years of Family Education, Nurse Years in the Current ICU, and Organizational Resources Predicting Family Well-being (N=44)

Model	Step and Predictor Variable	B	SE B	β	R ²	Adj R ²	ΔR^2	t	p
1	Step 1: Years Family Education	-.512	.70	-.118	.014	-.012	.014	-.73	.469
	Step 2: Years Family Education	-.696	.658	-.160				-1.06	.297
	Nurse Years in ICU	2.44	.953	.387	.163	.117	.148	2.56	.015
2	Step 1: Years Family Education	-.512	.70	-.118	.014	-.012	.014	-.73	.469
	Step 2: Years Family Education	-.610	.683	-.140				-.89	.378
	Organizational Resources	.826	.465	.269	.091	.042	.077	1.78	.084

RQ 3: What are the direct and indirect effects of the ICU climate of nursing care variables on the quality of nursing family care?

Two path models were tested using FCC as the outcome variable. In path model 1 nurse years in the current ICU was tested for a direct effect on FCC. The organizational resources variable was tested for indirect effects. In path model 2 organizational resources was tested for a direct effect on FCC, and depersonalization for indirect effects. The procedure outlined by A. F. Hayes (2013) was followed using an SPSS macro (A. F. Hayes, 2016). The number of bootstrapped samples was set at the program default of 5,000 (A. F. Hayes, 2016). The results are shown in Table 22. The direct and indirect effects also are displayed in Figures 5 and 6. In path model 1, nurse years in the current ICU had a direct effect on FCC; however, the indirect effect of nurse years in the ICU on FCC through organizational resources was not significant. In path model 2, organizational resources did not have a direct effect on FCC; however, there was a significant indirect effect of organizational resources on FCC through the depersonalization

variable. The total effect was significant. When the ratio of the indirect effect to the total effect ($P_M = .617$) is interpreted within the context of the total effect of .553, it suggests a medium effect size (Preacher & Kelly, 2011; Wen & Fen, 2015).

Table 22

Direct and Indirect Effects for the Predictors Nurse Years in Current ICU and Organizational Resources on FCC in Model, and Organizational Resources and Depersonalization on FCC in Model 2

Path Model	Effect and Predictor	B	SE B	t	p	95% CI	P_M
1	Direct Effect: Nurse years ICU	-.949	.470	-2.02	.05		
	Indirect Effect: Organizational Resources	.146	.178			-.098, .556	-.181
	Total Effect	-.803	.507	-1.59	.12		
2	Direct Effect: Organizational Resources	.212	.259	2.59	.419		
	Indirect Effect: Depersonalization	.341	.171			.015, .707	.617
	Total Effect	.553	.213	2.59	.013		

Note. P_M = the ratio of the indirect effect to the total effect.

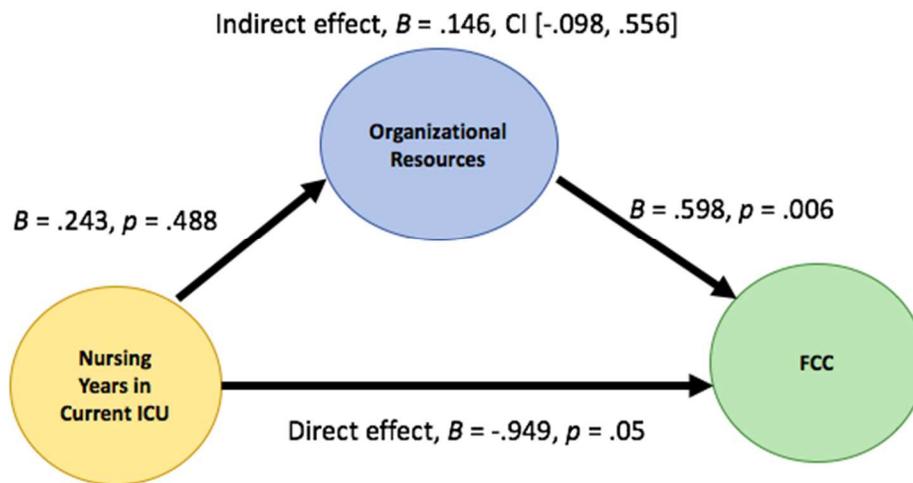


Figure 5. Path model 1: Unstandardized regression coefficients for the relationship between nurse years and FCC as mediated by organizational resources.

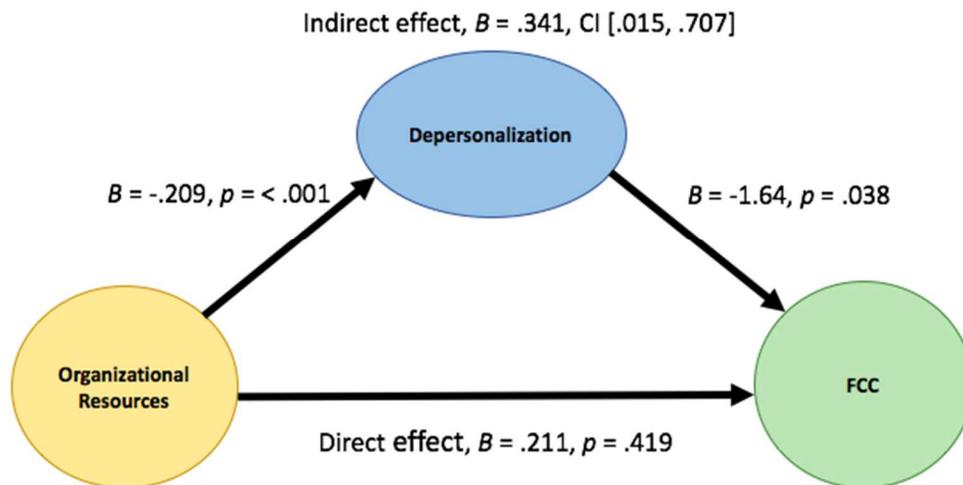


Figure 6. Path model 2: Unstandardized regression coefficients for the relationship between organizational resources and FCC as mediated by depersonalization.

RQ 4: What are the direct and indirect effects of the climate of nursing care variables and quality of nursing family care on family well-being?

Two path models were generated using family well-being as the outcome variable. In path model 3, nurse years in the current ICU was tested for a direct effect on family well-being, and FCC was tested for indirect effects. In path model 4 the organizational resources variable was tested for a direct effect on family well-being, and FCC was tested for indirect effects. The procedure outlined by A. F. Hayes (2013) was followed. The number of bootstrapped samples was set at the program default of 5,000 (A. F. Hayes, 2016). The results are shown in Table 23. The direct and indirect effects are displayed in Figures 7 and 8. In model 3, the indirect effect of nurse years in the current ICU on family well-being through FCC was not significant; however, there was a significant direct effect of nurse years in the current ICU on family well-being, and the total effect was significant. In model 4, FCC did not mediate the relationship between organizational resources and family well-being, and organizational resources did not have a direct effect on family well-being.

Table 23

Direct and Indirect Effects for the Predictors Nurse Years in Current ICU and FCC on Family Well-being in Model 3, and HECS and FCC on Family Well-being in Model 4

Path Model	Effect and Predictor	B	SE B	t	p	95% CI	P _M
1	Direct Effect: Nurse years ICU	2.45	.965	2.54	.015		
	Indirect Effect: FCC	-.101	.302			-1.22, .301	-.043
	Total Effect	2.35	.929	2.53	.015		
2	Direct Effect: Organizational Resources	.708	.466	1.52	.136		
	Indirect Effect: FCC	-.124	.197			-.572, .216	-.212
	Total Effect	.584	.430	1.36	.181		

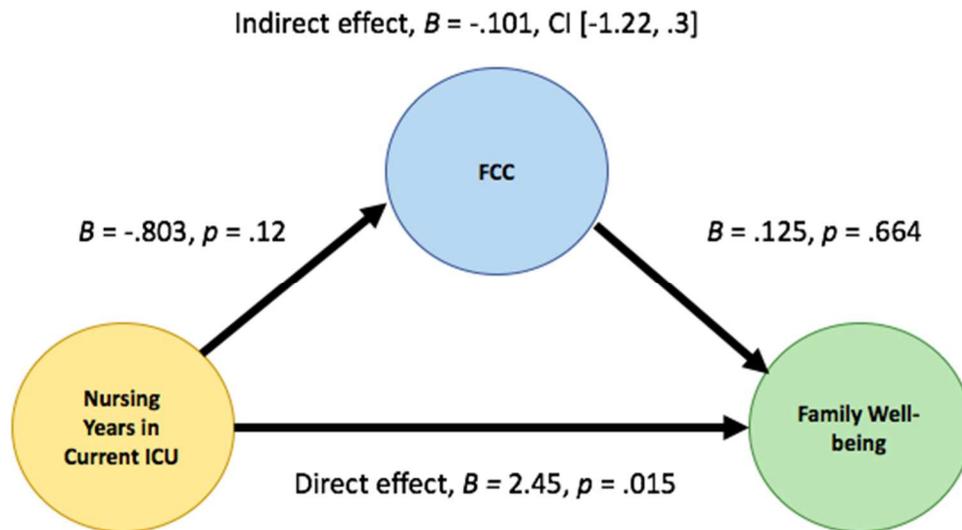


Figure 7. Path model 3: Unstandardized regression coefficients for the relationship between nurse years and family well-being as mediated by FCC.

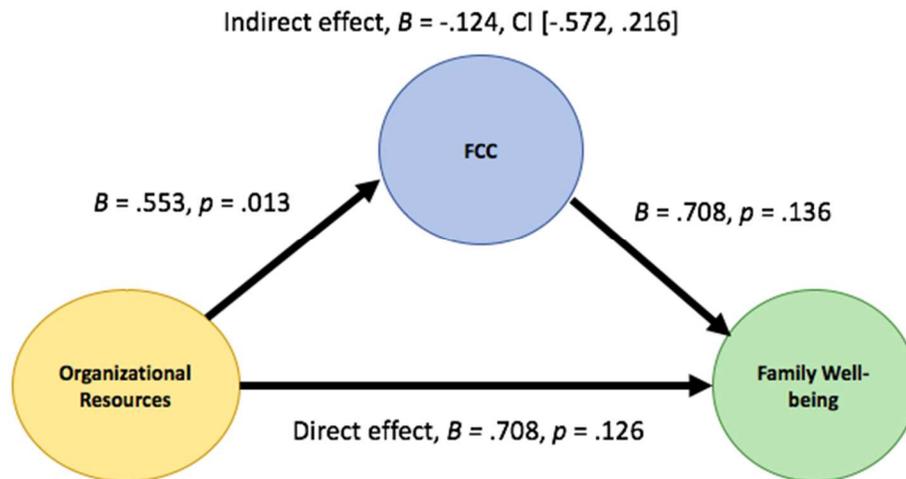


Figure 8. Path model 4: Unstandardized regression coefficients for the relationship between organizational resources and family well-being as mediated by FCC.

Chapter Summary

Family members reported high levels of FCC and nurse support and moderate levels of well-being. There were significant differences in family responses by specialty ICU for FCC and family well-being. Nurses reported moderate ethical conflict, with higher scores for the degree than the frequency of conflict. Of the types of ethical conflict, moral distress had the highest percentage of nurse responses. Although nurses had high levels of emotional exhaustion and depersonalization, they also had high levels of personal accomplishment and an overall positive perception of organizational support. Nurses responses in the MICU were significantly lower for organizational resources for ethical conflict than nurses in the CVICU, SICU and NICU. When controlling for nurse years in the current ICU, scores for the depersonalization and organizational resources variables were different among the ICUs. The MICU had significantly higher depersonalization scores and lower organizational resources scores than the CVICU.

Among the family variables, only FCC and nurse support were positively correlated. For the nurse variables, there was a negative relationship between organizational resources and exposure to ethical conflict, and between depersonalization and organizational resources. There was a positive relationship between exposure to ethical conflict and depersonalization.

When examining relationships among nurse and family variables a positive relationship was found between family educational level and nurse personal accomplishment, and between FCC and the degree of conflict, personal accomplishment, and organizational resources. A negative relationship was found between FCC and depersonalization, and a positive relationship between nurse years in the current ICU and depersonalization. Nurse years in the current ICU was positively related to family well-being.

Organizational resources (15.9%) and depersonalization (16%) each uniquely explained the variance in in FCC. Only nurse years in the current ICU was a significant predictor of family well-being. Nurse years in the current ICU had a direct effect on FCC; however, the total effect was not significant. Depersonalization mediated the effect between organizational resources and FCC. Nurse years in the current ICU had a direct effect on family well-being. FCC did not mediate the effect of nurse years in the current ICU on family well-being, or organizational resources on family well-being. The discussion of these findings is presented in Chapter V.

CHAPTER V

DISCUSSION

The purpose of the current study was to explore relationships among variables attributed to the ICU climate of care, quality of nursing family care, and family well-being. In this chapter, study findings are discussed within the context of prior literature. A manuscript highlighting salient study findings prepared for submission to the *American Journal of Critical Care Nursing* is included. Recommendations for nursing practice, policy, education, and future research are presented.

Summary of Main Findings

The theoretical relationships purposed in this study were only partially supported. Organizational resources and depersonalization were both related to FCC, explaining 16% of the variance. These ICU climate of care variables had significant relationships with FCC, supporting part of the conceptual model. However, there were weak, nonsignificant relationships between nurse provided support and family well-being, as well as FCC and family well-being. The quality of nursing family care was not related to family well-being.

Significant direct and indirect relationships were found. The most notable finding was the indirect effect of organizational resources on FCC through nurse depersonalization. This indicates a possible mediation effect of nurse burnout that may relate to nursing family care delivery. Additionally, the negative relationship between nurse depersonalization and FCC is consistent with the theoretical underpinnings of the study.

Nursing years in the current ICU had a direct effect on family well-being, a relationship that may be related to experiential nursing practice. Additionally, nurse years in the ICU also had a direct effect on FCC; however, not in the expected direction. Nurse years in the ICU had a

negative relationship with FCC, indicating FCC decreases as nurse years in the ICU increase.

Nurse exposure to ethical conflict was negatively related to nurses' perception of organizational resources, and positively related to depersonalization. This finding was expected and supports theorized relationships among nurse variables.

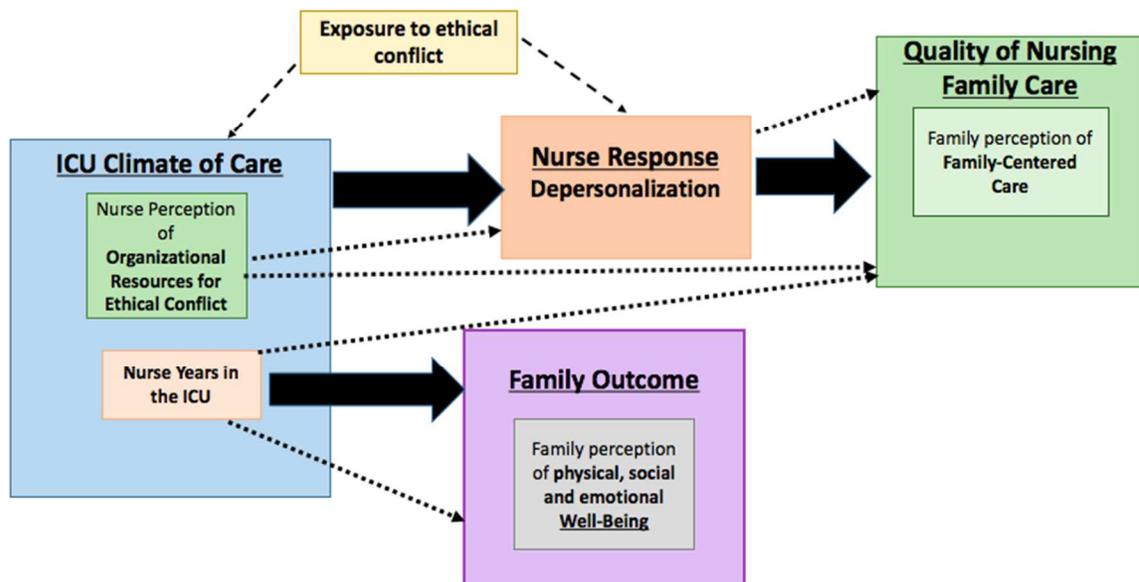


Figure 9. Revised conceptual model based on study findings. The dashed line indicates a relationship found only in the nurse data. Dotted lines represent relationships with nurse and family data combined.

The main study findings did not support the hypothesized relationships in the original conceptual framework. Figure 9 was created from significant study findings to illustrate relationships found among variables and guide future research. Although nurse years in the current ICU was not originally conceptualized as a climate of care variable, findings from this study support the addition of this variable to the climate of care. The lack of relationship between the quality of nursing family care and family well-being requires further investigation.

The revised model (Figure 9) is used to organize the discussion of study findings. The order of presentation is as follows: 1) ICU climate of care, 2) depersonalization, 3) FCC, and 4) family well-being.

A manuscript highlighting the main findings is presented after the section entitled, 'Family Well-being'. After the manuscript, the discussion continues about descriptive findings, followed by limitations and implications for practice, education, policy and research.

ICU Climate of Care

When examining the ICU climate of care variables there were positive relationships among exposure to ethical conflict, emotional exhaustion, and depersonalization. A negative relationship between nurse ethical conflict and organizational resources was also found. These findings are consistent with prior studies (Dalmolin et al., 2014; Hamric et al., 2012; Meltzer & Huckabay, 2004; Rushton et al., 2015; Sauerland et al., 2014; Shoorideh et al., 2015; Silén et al., 2011; Teixeira et al., 2014) and support the current study's theoretical underpinnings-that ethical conflict and resultant moral distress may increase symptoms of burnout.

There were negative correlations between nurse years in the current ICU, the degree of ethical conflict, and exposure to ethical conflict. This suggests that as nurses spend more time in the ICU their perception of their exposure to ethical conflict and the degree of conflict tend to decrease. There are conflicting findings in the literature about whether moral distress intensifies or lessens with years of ICU nursing experience (McAndrew et al., 2016). The findings in the current study support those reported by Ganz and Berkovitz (2012) and Woods et al. (2015), in which nurses with fewer years in the ICU reported greater ethical conflict. However, others have found nurses with more years of experience had higher levels of moral distress (Hamric et al., 2012; Sauerland et al., 2014). Findings in the current study do not support the theory of the

crescendo effect of moral distress (Epstein & Hamric, 2009), in which the cumulative effects of moral residue intensify subsequent experiences with moral distress.

Depersonalization

A positive relationship was found in the current study between exposure to ethical conflict and depersonalization. When examining nurse and family correlations, depersonalization had a positive relationship with nurse years in the current ICU, indicating depersonalization may increase over time in the ICU setting. It has been theorized that repeated exposure to ethical conflict may lead to burnout (Epp, 2012; Falcó-Pegueroles et al., 2016; Moss et al., 2016), and this is supported by findings in the current study. Glasberg et al. (2007) also found that depersonalization was related to high levels of moral strain. Depersonalization may be a coping mechanism to deal with ethical conflict/moral distress in clinical practice. However, what is alarming is the possibility that depersonalization may influence nurse and family relationships and compromise the delivery of FCC.

A negative relationship was found between nurse depersonalization and FCC. In a qualitative study, ICU nurses reported that ineffective treatments led to a sense of indifference and decreased their sensitivity in responding to patients and families (Aghabarary & Nayeri, 2016). Nurses also shared that emotionally demanding situations made it difficult to support families in another study (Söderström et al., 2003). Depersonalization among ICU nurses may be a symptom or a response to conflicts related to utilization of life-sustaining treatments, and has the potential to decrease the quality of FCC.

It was found in in the current study depersonalization may mediate the effect of organizational resources on FCC. This points to depersonalization as the most detrimental aspect of burnout for nursing family care. It has been documented that lack of nurse support can

contribute to nurse-patient and family disengagement (Bridges et al., 2013). Depersonalization may contribute to the non-supportive nurse family care behaviors described in the literature, such as an attitude the family is an obstacle in the delivery of patient care, ignoring family members, and abrupt and inadequate communication (A. Adams et al., 2017; Söderström et al., 2003; Wong et al., 2015). These types of interactions with nurses contribute to family members' distress and feelings of vulnerability (Nelms & Eggenberger, 2010).

FCC

Another notable finding was the positive relationship between FCC and organizational resources for ethical conflict. Organizational resources may support the delivery of FCC. Additionally, there was a positive relationship between FCC and the degree of ethical conflict. As the degree of conflict increased, personal accomplishment also increased. Others have reported a positive association between personal accomplishment and the withdrawal life sustaining treatments (Teixeira et al., 2014). It may be that working towards the resolution of ethical conflict motivates nurses to provide better family support and care, and this is professionally fulfilling.

In the current study, nurses' perceptions of organizational resources were predictive of FCC, indicating that organizational resources for ethical conflict may play a pivotal role in the delivery of FCC. In the hospital domain of the HECS instrument, there are items that address the safety of care delivered, competency of coworkers, and access to information and resources to solve problems (Olson, 1998). Thus, this finding may indicate that when nurses perceive they have support for the resolution of patient care related conflicts, they may be more likely to deliver FCC. In a study of nurse attitudes about FCC, a negative correlation was found between barriers to FCC and attitudes towards family presence during resuscitation (Ganz & Yoffe, 2012).

Similarly, nursing workflow partially mediated the relationship between the ICU practice environment (staffing and resources) and nurse attitudes towards family engagement in care (Hetland et al., 2017). The findings from prior research and the current study provide evidence nurses require organizational support and healthy practice environments to effectively deliver FCC.

Nurse years in the current ICU also had a direct effect on FCC; however, not in the expected direction. As nursing years in the current ICU increased, FCC decreased. The FCC instrument is a measure of information and general support provided to families, with these components accounting for 33% of the variance in FCC in one study (Wang et al., 2016). However, the FCC tool also quantifies elements of family engagement in care, such as inclusion in patient care, involvement in decisions, and family presence during procedures (Mitchell et al., 2012). Findings from the current study suggest nurses with fewer years of experience are more likely to involve family members in care than those with more ICU experience. In a recent study on nursing attitudes towards family engagement in care it was noted that younger nurses and older nurses had a more positive attitude about family engagement than nurses in the age range of 25 to 49 years of age (Hetland, Hickman, McAndrew, & Daly, 2017). The relationships between nurse ICU experience and FCC requires further investigation.

Family Well-being

An unexpected finding in the current study was the lack of a relationship between FCC and family well-being. In prior research, family stressors, strains, and transitions accounted for 40% of the variance in family well-being (Leske & Jiricka, 1998). Family determinants may be better predictors of well-being, however, other family outcomes such as anxiety, stress, perceived support, empathy, and satisfaction may be outcomes more closely associated with the delivery of

FCC. In a recent study of family presence during resuscitation after trauma, this intervention was associated with significantly higher family well-being and lower anxiety scores (Leske et al., 2017). Family well-being may be enhanced by FCC clinical interventions; however, further research is needed.

There was a significant, positive relationship between nurse years in the ICU and family well-being, and nurse years was predictive of family well-being with a direct effect. This was the only variable that significantly contributed to family well-being. One possible explanation is that nurses with more experience do a better job of explaining information and addressing family needs. In a study examining nurses' knowledge and skill related to family care, age and experience were positively correlated with all items on the measure, indicating increased confidence in knowledge about family member needs and greater communication skills for more experienced nurses (Agård & Maindal, 2009).

In the seminal work of Benner (1984), expert nurses are characterized by their ability to seamlessly assess and intervene, using nursing experience to delve into a patient care situation and formulate a plan. Further, it is nursing experience that creates stronger emotional connections to patients and families (Benner, Tanner, & Chesla, 1996). Benner et al. (1996) began scholarly dialogue about 'knowing the patient'. Tanner (2006) expands upon this idea, claiming nurses who appreciate the individuality of those for they care have a better grasp on patient/family responses. Understanding the uniqueness of each person allows one to individualize care and develop a plan that best addresses identified needs (Tanner, 2006). Although elements of this can be taught, the fluidity of this process is experiential (Benner, 1984). This may partially explain the finding that families experience greater well-being in the presence of nurses with more years of ICU nursing experience.

The next section is a manuscript of main study findings prepared for the *American Journal of Critical Care Nursing*. Immediately following the manuscript, the chapter resumes with further discussion of other study findings.

Manuscript

Climate of Care, Nursing Family Care and Family Well-being in the Intensive Care Unit

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Moral Distress, Burnout, Organizational Ethical Climate

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Abstract

Background: High levels of exposure to ethical conflict and a perceived lack of organizational support may negatively influence nursing family care and family outcomes in the ICU. The specific aims of this study were to determine 1) the extent to which ICU climate of care was related to quality of nursing family care and family well-being 2) direct and indirect effects of climate of care on the quality of nursing family care and family well-being.

Methods: A cross-sectional, correlational design with a convenience nurse/family sample from 5 ICUs at a Midwest hospital. The Ethical Conflict Questionnaire-Critical Care Version, Maslach Burnout Inventory-Human Services Survey and Hospital Ethical Climate Scale (HECS) were used to measure the climate of care. The Family-Centered Care (FCC)-Adult Version and Nurse Provided Family Social Support Scale were family measures of the quality of nursing family care, and the Family Well-being Index was used to measure family well-being.

Results: In separate hierarchical regression models, organizational resources ($\beta = .401, p = .006$) and depersonalization ($\beta = -.511, p = .006$) were significant predictors of FCC. There was an indirect effect of organizational resources on FCC through depersonalization ($B = .341, 95\% \text{ CI } [.015, .707]$). Nurse years in the ICU had a direct effect on family well-being ($B = 2.45, p = .015$).

Conclusions: This study highlights the importance of organizational resources and the possible negative influence burnout may have on nursing family care. ICU nurse experience may be an important variable related to family care delivery and family well-being. Further research is needed to examine the relationships among the ICU climate of care, nursing family care, and family outcomes.

Climate of Care, Nursing Family Care, and Family Well-being in the Intensive Care Unit

The majority of critically ill patients cannot provide direction for their treatment, and families subsequently must direct the care of their family member (Cook et al., 2001; Curtis & White, 2008; Thompson et al., 2004). Families experience a heavy burden in these situations (Limerick, 2007; MacDonald, Weeks, & McInnis-Perry, 2011; Wiegand, 2008). With advancing technology, initiating life-sustaining treatments can lead to ethical conflicts in the intensive care unit (ICU) (Azoulay et al., 2009; Meth, Lawless, & Hawryluck, 2009; Studdert et al., 2003). Families may not accept the futility of life-support measures as quickly as health care professionals (Hsieh, Shannon, & Curtis, 2006; Wiegand, 2008). Differences in the perspectives of the health care team and family can contribute to conflicts about goals of care for the patient (Thompson et al., 2004). Nurses' ethical concerns about the treatment choices families make may contribute to a lack of family involvement and support in critical care (Pavlish, Hellyer, Brown-Saltzman, Miers, & Squire, 2015; Wiegand & Funk, 2012). Family inclusion in health care delivery is vital for positive patient and family outcomes (M. A. McCubbin & McCubbin, 1993; Söderström, Saveman, Hagberg, & Benzein, 2009). Inadequate family support as a consequence of ethical conflict can negatively affect the health and well-being of critically ill patients and their families (Paul & Rattray, 2008; Wiegand & Funk, 2012).

Ethical conflict occurs when nurses experience conflicting ethical principles, professional values, or beliefs (Hsieh et al., 2006; Pavlish, Hellyer, et al., 2015; Studdert et al., 2003). Nurse reported ethical conflict is prevalent in the ICU (Azoulay et al., 2009; Hamric, Borchers, & Epstein, 2012; Poncet et al., 2007; Whitehead, Herbertson, Hamric, Epstein, & Fisher, 2015), and increases in frequency and severity in organizational ethical climates low in resources (Hamric et al., 2012; Pavlish, Brown-Saltzman, Fine, & Jakel, 2015; Pavlish, Hellyer, et al., 2015). Ethical

conflict sequelae for nurses include moral distress and burnout, which can lead to patient and family avoidance, depersonalization of patients, and an emotionally distant presence during patient and family care (Corley, 2002; De Villers & DeVon, 2013; Meltzer & Huckabay, 2004; Wiegand & Funk, 2012). Inadequate organizational resources for ethical conflict may potentiate ethical conflict due to institutional barriers that hinder nursing autonomy and holistic care (Huffman & Rittenmeyer, 2012; Moss, Good, Gozal, Kleinpell, & Sessler, 2016). Nurses report that ethical conflict is a significant issue in the ICU, and can prolong patient suffering by delaying decisions about life-sustaining treatments (Azoulay et al., 2009; Studdert et al., 2003; Wiegand & Funk, 2012). Ethical conflict experienced by nurses may compromise communication with families, and limit family support interventions (Gutierrez, 2012, 2013); however, few studies have addressed the relationship between nursing family care and family outcomes.

The purpose of the current study was to determine the relationships among variables related to the ICU climate of care (ethical conflict, burnout, and organizational resources for ethical conflict), the quality of nursing family care (family-centered care and nurse provided family support) and family well-being the ICU setting. The specific aims were to determine 1) the extent to which ICU climate of care variables are related to the quality of nursing family care and family well-being 2) the direct and indirect effects of climate of care variables on the quality of nursing family care, and family well-being.

Conceptual Framework

An integrated conceptual figure derived from the theoretical underpinnings of the Resiliency Model of Family Adjustment and Adaptation (RMFAA) (M. A. McCubbin & McCubbin, 1993), ecological and family systems perspectives, moral distress theory (Corley,

2002), and the healthy work environment framework (Huddleston, 2014) guided the study (Figure 1). Ethical conflict is conceptualized as a precursor to moral distress and burnout (Rushton, Batcheller, Schroeder, & Donohue, 2015). A poor ICU climate of care occurs when nurses are exposed to frequent and severe ethical conflict (Falcó-Pegueroles, Lluch-Canut, & Guàrdia-Olmos, 2013; Pavlish, Hellyer, et al., 2015) and perceive a low level of organizational support resources (Hamric et al., 2012; Pavlish, Brown-Saltzman, So, Heers, & Iorillo, 2015). High ethical conflict, moral distress and burnout, a low perception of hospital resources, and few years of experience in the ICU may exert a negative effect on the quality of nursing family care (family-centered care and nurse provided family support), and subsequently decrease family well-being. Family educational level is considered a family resource that will exert a positive, direct effect on family well-being (M. A. McCubbin & McCubbin, 1993).

Methods

Design and Setting

This was a cross-sectional, correlational study that took place in 5 ICUs (medical, surgical, cardiovascular, transplant and neurological) at a level-one trauma and academic medical center in the Midwest.

Participants

Family sample. A convenience sample of family members was asked to participate. Calculation of sample size was based on the available literature (Åstedt-Kurki, Lehti, Tarkka, & Paavilainen, 2004; McAndrew, Leske, & Garcia, 2011; Rushton et al., 2015), with an effect size $f^2 = .28$ (Cohen, 1988, 1992), inclusion of 2 predictor variables, and .80 power at the alpha .05 level (Soper, 2017). At least 38 family members were needed for adequate sample size. Patient/family inclusion criteria were: the critically ill family member must be on at least 2 or

more life-sustaining treatments, at moderate to high risk of dying as determined by a Sequential Organ Failure Assessment Score (SOFA) score of 10 to 24, and in the ICU at least 48 hours prior to family participation. Members of the family had to regularly visit the critically ill patient in the ICU, be 18 years of age or older, and report an ability to understand English.

The flow diagram in Figure 2 summarizes the details of family member screening and recruitment. A total of 44 family members participated in the study for a response rate of 71%. Family characteristics are shown in Table 3. The educational level of family members ranged from 9 to 30 years (*Mdn* = 14). The mean family member age was 52 years (*SD* = 13.18). Approximately half the family sample had not been in the ICU before as a family member.

Patient characteristics are provided in Table 4. SOFA scores ranged from 10 to 21 (*Mdn* = 13), with 68.2% of the sample at moderate risk of death and 31.8% at high risk of death. Age ranged from 19 to 88 (*M* = 58, *SD* = 18.39). ICU length of stay was between 3 to 59 days (*Mdn* = 9.5). More than half the sample transferred out of the ICU, and approximately 30% died.

Nurse Sample. A convenience sample of 250 critical care nurses from the 5 ICUs in the organization was invited to participate. For nurses to be eligible for the study they had to be employed by the organization as a registered nurse, work full time (Full Time Equivalent of .875 or higher) within one of the ICUs, and hold their position for 3 months or longer.

There were 115 nurses who responded to at least one of the survey instruments, for an overall response rate of 46%. Nurse characteristics and response rates for each ICU are shown in Table 5. Nurse years in their specialty ICU ranged from .25 to 36 years (*Mdn* = 2). The median for critical care nursing experience was 4 years (.25 to 42), and 7 years (.25 to 43) for nursing experience.

Measurement

Information about family and nurse measures are provided in Tables 1 and 2.

Demographic and other sample characteristics were collected at the end of the nurse and family surveys.

Data Collection

For family recruitment, the principal investigator (PI) reviewed unit log books to find patients admitted within 48 to 96 hours to the ICU. The type and quantity of life support in place was determined from nursing white boards, and patients on 2 or more treatments were screened for family inclusion. A SOFA score was calculated (ClinCalc, 2017), and if the score met inclusion criteria, the PI spoke with the nurse to determine family spokespersons for possible participation in the study. Family members were provided with an overview of the study, including risks and benefits, and an explanation participation would require approximately 30 minutes of their time. Family members provided consent for their own participation, and for access to the patient's EMR to collect patient information; however, family members who did not provide access to the patient EMR were still able to participate. An iPad® was used to administer the survey through Qualtrics, a survey and data management system (Qualtrics, 2017). Family members were given a \$10 gift card in appreciation for their time.

Nurse data collection was concurrent with family data collection. Surveys were initially distributed electronically using Qualtrics software (2017), and later on paper to increase responses rates. An email was sent to ICU nurses that explained the study and inclusion criteria. A link to the survey was included at the end. Completion of the survey signified consent to participate. Nurses were offered a \$5 gift card in appreciation of their time. To receive the gift card nurses voluntarily provided an email address and the gift card was sent electronically.

Ethical Considerations

The study protocol was approved by the hospital site's institutional review board (PRO00029078).

Statistical Analyses

All analyses were completed in IBM SPSS Statistics (version 23). Descriptive statistics were used to summarize the sample and measures. Relationships among nurse and family variables were determined with Pearson's product-moment correlation coefficients. Hierarchical multiple regression was used to examine study Aim 1. Models were evaluated to determine how much of the variance in the outcome variable was explained by the model (adjusted R square), and each predictor variable's (coefficients) contributions to the model. Only predictors significant at an alpha level of .05 or less were used in subsequent analyses. Study Aim 2 was tested with Hayes (2013) approach to testing simple mediation models using the PROCESS macro in SPSS (Hayes, 2016).

Results

Family Descriptive Statistics

Means and standard deviations are reported for family instruments for the family aggregate and by ICU are found in Table 6. Overall, family members reported high levels of family-centered care (FCC) and nurse provided family support, and moderate levels of well-being.

Nurse Descriptive Statistics

Nurses reported moderate exposure to ethical conflict, with higher scores for the degree of conflict than frequency. Emotional exhaustion and depersonalization scores were high; however, personal accomplishment scores were also high. Nurse reported moderate

organizational resources for ethical conflict. Moral distress was the most frequent type of response to ethical conflict, followed by moral outrage. Table 7 provides the descriptive data for nurse instruments.

Relationships among the ICU climate of care variables were examined using Pearson product-moment correlation coefficients. Among the nurse variables, there were positive correlations between exposure to ethical conflict and emotional exhaustion ($r = .55, p = .01$), and depersonalization ($r = .31, p = .01$). A negative relationship was found between the exposure to ethical conflict and organizational resources ($r = -.22, p = .05$).

Aim 1: The extent to which ICU climate of care variables were related to the quality of nursing family care and family well-being

Pearson product-moment correlation coefficients were determined for the nurse and family variables (Table 8). Selection of predictor variables was based on theoretical underpinnings and zero order correlations. Predictors with a correlation of .60 or higher were not entered simultaneously into a regression model (Hair, Black, Babin, & Anderson, 2010; Meyers, Gamst, & Guarino, 2013). A significant correlation between nurse provided family support and FCC (.72) was found; therefore, only FCC was used in subsequent analyses.

Based on the significant relationships between depersonalization, organizational resources, nurse years in the current ICU and FCC, as well as the relationship between nurse years in the current ICU and family well-being, these variables were used in analysis of study Aims 1 and 2.

Hierarchical multiple regression analysis was used to determine the relative contribution of variables predicting FCC. Theoretically, organizational resources and depersonalization contribute to the delivery of FCC. Two separate models were generated using FCC as the

outcome variable. In model 1 nurse years in the current ICU was entered as a control, followed by organizational resources, and in model 2, the control variable remained the same followed by depersonalization as the second predictor (Table 9). Both models significantly predicted FCC (Model 1, $F(2,41) = 5.641, p = .007$, Model 2, $F(2, 41) = 5.66, p = .007$) and explained 21.6% of the variance in FCC. In model 1, organizational resources ($\beta = .401$) explained more of the variance in FCC than nurse years in the current ICU ($\beta = -.281$); however, both made statistically significant contributions to the model. In model 2, only depersonalization uniquely explained 16% of the variance in FCC.

In models 3 and 4 (Table 10) the contribution of variables predicting family well-being were determined. Family educational level was entered as a control variable in both models. In model 3 the second predictor was nurse years in the current ICU, and organizational resources in model 4. Model 3 significantly predicted well-being ($F(2, 37) = 3.576, p = .038$) and explained 16.2% of the variance. Nurse years in the current ICU was the only significant predictor ($\beta = .387$) and uniquely explained 14.8% of the variance in family well-being. Model 4 did not predict family well-being ($F(2, 37) = 1.86, p = .17$).

Aim 2: The direct and indirect effects of climate of care variables on the quality of nursing family care, and family well-being.

Using the theoretical framework as a guide and the inclusion of salient variables from the regression analyses, two path models were tested using FCC as the outcome variable. Two additional path models were tested using family well-being as the outcome. The number of bootstrapped samples was set at 5,000 (Hayes, 2016).

In model 1 (Figure 3), nurse years in the current ICU had a direct effect on FCC; however, the indirect effect of nurse years in the ICU on FCC through the organizational

resources variable was not significant. In path model 2 (Figure 4), organizational resources did not have a direct effect on FCC; however, there was a significant indirect effect of organizational resources on FCC through depersonalization ($P_M = .617$) (Preacher & Kelley, 2011).

In model 3 (Figure 5), there was a direct effect of nurse years in the current ICU on family well-being. However, the indirect effect on nurse years in the current ICU on family well-being through FCC was not significant. In model 4 (Figure 6) there were no direct or indirect effects. A revised conceptual model based on relationships found among variables is presented in Figure 7.

Discussion

In the current study, the organizational resources variable was predictive of FCC, indicating that organizational ethical resources may play a pivotal role in the delivery of FCC. In the hospital domain of the organizational resources measure (HECS), there are items that address the safety of care delivered, competency of coworkers, and access to information and resources to solve problems (Olson, 1998). In a study of nurse attitudes about FCC, a negative correlation was found between barriers to FCC and attitudes towards family presence during resuscitation (Ganz & Yoffe, 2012). Similarly, nursing workflow partially mediated the relationship between the ICU environment (staffing and resources) and nurse attitudes towards family engagement in care (Hetland, Hickman, McAndrew, & Daly, 2017). The findings from prior research and the current study provide evidence nurses require organizational support to deliver FCC.

Findings in the current study suggest depersonalization may mediate the effect of organizational resources on FCC. This points to depersonalization as the most detrimental aspect of burnout for nursing family care. It has been documented that lack of nursing family support can contribute to nurse-patient and family disengagement (Bridges et al., 2013).

Depersonalization is theorized as a contributing factor of non-supportive nurse family care behaviors described in the literature, such as an attitude the family is an obstacle in the delivery of patient care, ignoring family members, and abrupt and inadequate communication (A. Adams, Mannix, & Harrington, 2017; Söderström, Benzein, & Saveman, 2003; Wong, Liamputtong, Koch, & Rawson, 2015). These types of interactions with nurses contribute to family members' distress and feelings of vulnerability (Nelms & Eggenberger, 2010). Families have identified a need for greater nursing support in the ICU (Eggenberger & Sanders, 2016; Karlsson, Forsberg, & Bergbom, 2010; McKiernan & McCarthy, 2010; Plakas, Taket, Cant, Fouka, & Vardaki, 2014; Vandall-Walker & Clark, 2011). Addressing barriers to nursing family care is an important area of development for future research.

Although nurse years in the current ICU was not originally conceptualized as a climate of care variable, the negative relationship between FCC and nurse years in the ICU, and the positive relationship between nurse years in the ICU and family well-being support the relevance of this factor in future research. There was a direct effect of nurse years in the ICU on FCC, but not in the expected direction. Findings from the current study suggest nurses with fewer years of experience are more likely to deliver greater FCC than those with more ICU experience. In a recent study on nursing attitudes towards family engagement in care it was noted that younger nurses had a more positive attitude about family engagement than nurses in the age range of 25 to 49 years of age (Hetland, Hickman, McAndrew, & Daly, 2017). The relationships between nurse ICU experience and FCC delivery requires further investigation.

In contrast to the relationship found between nurse years and FCC, it was found that nurse years in the ICU actually predicted and had a direct effect on family-wellbeing. This was the only measure that significantly contributed to family well-being. As nurses spend more time

in the ICU they may become better at meeting family needs. In a study addressing nurses' knowledge and skill related to family care, age and experience were positively correlated with all items on the measure, indicating increased confidence in knowledge about family member needs and greater communication skills for nurses with more experience (Agård & Maindal, 2009). The well-being measure examined family members' experience of anxiety, and level of distress about the health of their family member (H. I. McCubbin & Patterson, 1983). Nurses with more ICU experience may address these family concerns to a greater extent by providing more information about the critically ill patient. The link between nursing experience and family well-being aligns with the seminal work of Benner (1984), in which expert nurses are characterized by the ability to seamlessly assess and intervene. Nursing experience is foundational to the individualization of patient and family care, and developing emotional connections within nurse-family relationships (Benner, Tanner, & Chesla, 1996; Tanner, 2006).

Implications for Nursing Practice

The results of the current study indicate opportunities to optimize nurse and family outcomes through unit and organizational based nurse and family support strategies. It is documented in the literature that families are not consistently engaged in patient care, or integrated into health care processes (Haines, Kelly, Fitzgerald, Skinner, & Iwashyna, 2017; Olding et al., 2016). Many factors influence nurses' ability to form positive relationships with family members; however, organizational characteristics are documented in the literature as having greatest impact (Bridges et al., 2013). Development of improvement strategies at systems levels to enhance nurse-family relationships and family engagement (Moss et al., 2016) in the ICU are important targets for clinical practice.

Patient and FCC culture within health care organizations in relationship to clinical care requires attention (Haines et al., 2017; Olding et al., 2016; Wiegand, Grant, Jooyoung, & Gergis, 2013). It is documented that ICU and organizational policies influence the degree to which family members believe they can be involved in the care of their critically ill family member (Reeves et al., 2015), as well as nurses comfort with engaging families in patient care (Al-Mutair, Plummer, Brien, & Clerehan, 2014; Hetland et al., 2017). The creation of patient and family engagement must be driven by the organizational vision and mission.

Inadequate education and training for interactions with families has been cited in the literature as a barrier to nursing family care (Buckley & Andrews, 2011; Engström & Söderberg, 2007; Shirazi, Sharif, Rakhshan, Pishva, & Jahanpour, 2015; Stayt, 2007). There is a need to incorporate critical reflection educational strategies into curriculum to support nurse-patient and family interactions (Benner, Tanner, & Chesla, 1992; Tanner, 2006).

Directions for Future Research

The current study fills an important gap in the literature by addressing the relationships among ethical conflict and burnout, FCC, and family well-being. The organizational resources variable provided a valuable measure of how the organization may support or challenge the resolution of ethical conflict in clinical practice. Ethical conflict and resultant moral distress and burnout are a manifestations of health care culture and systems (Epstein & Hurst, 2017; Huffman & Rittenmeyer, 2012). Measurement of organizational support is imperative for analysis of ethical conflict within critical care. Although many studies have measured ethical conflict and burnout, fewer have addressed organizational and practice environment factors, and the relationship between patient and family outcomes in the ICU. This is a critical area of research development, as interventions may not be effective if only directed at the responses of nurses or

family members. It is vital that future research examine nursing care culture, organizational support mechanisms, and determine how specific environments of care affect nurses, patients and families in the ICU setting.

The current study aimed to measure the family's perception of the quality of nursing family care. Few studies have measured FCC and nurse provided family support. Although nurse provided family support was not used in analyses in the current study, it remains an important aspect of nursing family care. Further testing and development of the FCC-Adult Version and tools to measure nurse provided support are needed with large family samples. It is well documented that families consider nurses a vital form of support (J. A. Adams, Anderson, Docherty, Steinhauer, & Bailey, 2014; Karlsson et al., 2010; Segaric & Hall, 2015; Vandall-Walker & Clark, 2011). However, there is a paucity of measures to examine nursing contributions to family care. Family nursing care is amenable to intervention, and may be an avenue for improving family outcomes in future research. However, without reliable and valid tools suitable for repeated measures, it will be challenging to advance the science of ICU nursing family care.

Limitations

This was a nonexperimental, descriptive, cross sectional study that inherently does not control some threats to internal validity. Due to the exploratory nature of the phenomena under study it was not possible to use a design that would offer more control. Results are interpreted with caution, as family and nurse responses were not matched. Families were asked to complete instruments at 48 to 96 hours of the critically ill patient's admission to the ICU. For family members who are in the ICU an extensive period of time, this initial response may not reflect their overall perspective of nursing family care quality, and their well-being scores may fluctuate

through the progression of the ICU experience. Participants may have altered their responses because they were aware they were in the study, or in response to the researcher. The nurse and family samples may not reflect the general population. This is an inherent limitation of a convenience sample with participant self-selection. Finally, only one family member provided responses. Other family members within the same family may have different perspectives.

Conclusions

This exploratory study provided the groundwork for larger studies to examine climate of care variables, the quality of nursing family care, and various family outcomes. The family is vital to patient health and well-being; however, this is often overshadowed by the patient focus in health care, particularly in acute and critical care environments. Few family studies conducted in the ICU measure positive family outcomes, with the majority examining the negative psychological symptoms of individual family members. The focus on family well-being in this study is consistent with a strength based approach to family research. Empowering nurses and families in critical care through structured organizational support is a productive path to achieving high quality nursing family care and positive patient and family outcomes.

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Tables

Table 1

Family Measures

Concept	Theoretical Definition	Operationalization/Measure	Number of items/Minutes to Complete	Total α in prior studies
Family well-being	Family social, emotional and physical health and well-being	Family Well-being Index (FWBI) (H. I. McCubbin & Patterson, 1983) Items scored from 0 to 10 Score ranges from 0 to 80 Higher scores = greater well-being	8 items/5 minutes	.75 to .85
Quality of Nursing Family Care	The degree to which family is involved and treated as a partner in health care, and nurse provided family support.	Family-Centered Care-Adult Version (Mitchell, Burmeister, Chaboyer, & Shields, 2012) Items scored 1 (<i>never</i>) to 4 (<i>always</i>) Score ranges from 20 to 80 Higher = greater FCC	20 items/5 to 10 minutes	.81 to .84
		Modified version of Social Support Scale from the Family Functioning, Family Health, and Social Support tool (FAFHES) (Astedt-Kurki, Tarkka, Rikala, Lehti, & Paavilainen, 2009) Slightly modified (5 items removed, 1 item reworded for ICU applicability) Items scored 1 (definitely disagree) to 6 (definitely agree) Total score 15 to 90, higher scores = greater nurse support	15 items/ 5 to 10 minutes	.82 to .98

Table 2

Nurse Measures

Concept	Theoretical Definition	Operationalization/Measure	Number of items/Minutes to Complete	Total α in prior studies
ICU Climate of Care	This describes the overall ethical milieu of the nursing practice environment including nurse perceived ethical conflict, burnout, and resources for ethical conflict.	Ethical Conflict in Nursing Questionnaire-Critical Care Version (ECNQ-CCV) (Falcó-Pegueroles et al., 2013) Measures frequency and degree of conflict and exposure to ethical conflict (Index of Exposure to Ethical Conflict or IEEC) Moral state determined based on definitions for moral indifference, well-being, uncertainty, dilemma, distress, and outrage for each item IEEC score from 0 (no exposure) to 475 (highest possible exposure)	19 items/ 15 minutes	.88

Concept	Theoretical Definition	Operationalization/Measure	Number of items/Minutes to Complete	Total α in prior studies
		Maslach Burnout Inventory-Human Services Survey (MBI-HHS) (Maslach, Jackson, & Leiter, 1996) Three subscales: emotional exhaustion (exhaustion related to work), depersonalization (detached and impersonal response), and personal accomplishment (achievement) Items scored from 0 (<i>never</i>) to 6 (<i>every day</i>) Cut off scores provided for low, moderate and high values No overall score-each subscale used separately in analyses	22 items/ 5 minutes	.71 to .90
		Hospital Ethical Climate Scale (HECS) (Olson, 1998) Items scored from 1 (almost never true) to 5 (almost always true) Score of 26 to 130 Higher scores indicate more positive perception of organizational support	26 items/ 10 minutes	.91

Table 3

Family Member Characteristics (N = 44)

Characteristic	<i>n</i>	%
ICU of critically ill family member		
MICU	16	36.6
CVICU	9	20.5
SICU	8	18.2
NICU	2	4.5
TICU	9	20.5
Relationship to critically ill family member		
Spouse/partner	18	40.9
Child	7	15.9
Parent	9	20.5
Sibling	7	15.9
Other	3	6.8
In ICU before as family member		
Yes	21	47.7
No	23	52.3
Gender		
Male	11	25.0
Female	33	75.0

Characteristic	<i>n</i>	%
Ethnicity		
Hispanic or Latino or Spanish Origin of any race	1	2.3
Black or African American	9	20.5
White	33	75.0
Two or more races	1	2.3

Table 4.

Patient Characteristics (N = 41)

Characteristic	<i>n</i>	%
Ethnicity		
Hispanic or Latino or Spanish Origin of any race	1	2.3
Black or African American	6	13.6
White/Caucasian	33	75.0
Two or more races	1	2.3
Not reported	3	6.8
Gender		
Male	23	52.3
Female	18	40.9
Code Status		
Full code	35	79.5
DNR	6	13.6
Advance directive		
Yes	21	47.7
No	20	45.5
Type of life-sustaining treatments		
Mechanical ventilation	41	93.2
Vasopressors	30	68.2
Continuous Renal Replacement Therapy (CRRT)	10	22.7
Extracorporeal Membrane Oxygenation (ECMO)	4	9.1
Ventricular Assist Device (VAD)	3	6.8
Intra-aortic balloon pump (IABP)	1	2.3
Deep sedation	10	22.7
Hypothermia therapy	2	4.5
Temporary pacer	2	4.5
Category of Diagnosis		
Severe sepsis or septic shock	3	6.8
Respiratory failure	9	20.5
Trauma	6	13.6
Cardiac	7	15.9
Liver disease	6	13.6
Neurological	4	9.1
Post code/cardiac arrest	4	9.1
Hematological/Oncological	2	4.5

Characteristic	<i>n</i>	%
Patient length of stay in ICU prior to family participation		
2 Days	9	20.5
3 Days	16	36.4
4 Days	19	43.2
Patient disposition after ICU stay		
Transfer to floor	28	63.5
Died	13	29.5

Note. *Three family members did not provide permission to view the patient EMR*

Table 5.

Nurse Response Rates by ICU and Characteristics

Characteristic	<i>n</i>	%
Educational attainment in nursing		
Diploma	7	6.1
ADN	15	13.0
BSN	75	65.2
MSN	9	7.8
DNP	1	.9
Not reported	8	7.0
Age		
21 to 24 years	7	6.1
25 to 35 years	61	53.0
36 to 45 years	12	10.4
46 to 55 years	16	13.9
56 to 65 years	12	10.4
Not reported	7	6.1
Gender		
Male	12	10.4
Female	96	83.5
Not reported	7	6.1
Ethnicity		
Hispanic or Latino or Spanish of any race	4	3.5
Asian	3	2.6
White	94	81.7
Two or more races	2	1.7
Not listed	3	2.6
Not reported	9	7.8

Note. *Although 115 nurses responded to the survey, 7 did report their unit or other demographic information.*

Table 6

Descriptive Statistics for Family Measures

Measure	Group	<i>n</i>	<i>M(SD)</i>	Range	<i>Mdn</i>	Cronbach's α
Family-centered care (FCC)	Aggregate	44	69.86(7.80)	52-80	71	.86
	MICU	13	66.52(8.32)	52-79	65	
	CVICU	8	75.12(2.64)	71-78	75	
	SICU	8	67.58(9.51)	54-78	69	
	NICU	2	74.00(4.24)	71-77	74	
	TICU	9	72.37(4.95)	63-80	71	
Nurse Provided Family Support	Aggregate	44	82.41(8.58)	55-90	86	.94
	MICU	13	80.13(7.26)	63-90	82	
	CVICU	8	85.53(5.41)	75-90	88	
	SICU	8	82.13(12)	55-90	88	
	NICU	2	89.00(1.41)	88-90	89	
	TICU	9	85.00(6.72)	71-90	88	
Well-being	Aggregate	44	40.64(14.92)	13-72	39	.81
	MICU	13	32.46(9.77)	13-46	35	
	CVICU	8	39.50(15.07)	13-59	44	
	SICU	8	54.10(13.61)	27-71	58	
	NICU	2	37.00(14.14)	27-47	37	
	TICU	9	42.44(17.07)	28-72	36	

Table 7

Descriptive Statistics for Nurse Measures

Measure	Group	<i>n</i>	<i>M(SD)</i>	Range	<i>Mdn</i>	Cronbach's α
Ethical Conflict Frequency	Aggregate	115	56.92(13.47)	21-95	56	.86
	MICU	35	56.85(13.78)	21-80	56	
	CVICU	22	54.71(11.86)	36-78	53	
	SICU	22	55.78(12.87)	32-80	56	
	NICU	14	63.40(12.17)	44-95	61	
	TICU	15	59.41(16.17)	28-84	65	
Ethical Conflict Degree	Aggregate	115	64.86(13.68)	26-95	67	.90
	MICU	35	63.84(14.95)	26-92	65	
	CVICU	22	67.75(9.59)	49-82	68	
	SICU	22	60.92(14.9)	37-85	60	
	NICU	14	66.86(12.71)	46-95	66	
	TICU	15	68.25(13.46)	40-87	72	

Measure	Group	<i>n</i>	<i>M</i> (<i>SD</i>)	Range	<i>Mdn</i>	Cronbach's α
Exposure to Ethical Conflict	Aggregate	115	209.64(72.59)	40-475	209	.90
	MICU	35	209.12(74.00)	40-324	211	
	CVICU	22	204.98(55.27)	121-308	208	
	SICU	22	201.65(76.42)	92-331	192	
	NICU	14	230.14(80.63)	142-475	223	
	TICU	15	227.1 (82.93)	100-336	222	
Emotional Exhaustion (EEMBI)	Aggregate	111	34.34(11.73)	15-63	34	.93
	MICU	35	36.46(11.97)	19-63	35	
	CVICU	22	30.45(9.43)	15-51	29	
	SICU	21	33.04(11.27)	15-60	34	
	NICU	14	33.36(14.11)	17-63	30	
	TICU	14	39.14(11.26)	16-52	44	
Depersonal- ization (DMBI)	Aggregate	111	15.45(6.53)	5-35	15	.75
	MICU	35	17.17(6.71)	5-32	16	
	CVICU	22	13.31(6.01)	5-28	14	
	SICU	21	17.04(6.16)	8-27	17	
	NICU	14	15.14(8.06)	7-35	15	
	TICU	14	13.71(4.33)	8-22	14	
Personal Accomp- lishment (PAMBI)	Aggregate	111	44.97(6.84)	26-56	46	.77
	MICU	35	43.79(7.29)	26-55	44	
	CVICU	22	46.00(4.68)	37-53	47	
	SICU	21	44.19(6.73)	27-55	44	
	NICU	14	49.07(5.30)	38-56	50	
	TICU	14	44.28(8.9)	31-55	48	
Organizational Resources (HECS)	Aggregate	110	94.99(12.16)	57-130	96	.908
	MICU	35	88.52(12.42)	57-107	88	
	CVICU	22	101.86(9.1)	86-130	103	
	SICU	21	97.3(10.24)	80-116	96	
	NICU	14	98.93(12.77)	72-129	98	
	TICU	14	92.86(11.25)	71-116	93	

Table 8.

Intercorrelations Among Nurse and Family Variables

Measure	Fam Ed	Fam Age	FCC	Supp	FWB	Freq	Degree	IIEC	EE	Dep	PA	HECS	Nurse Y
Fam Ed													
Fam Age	-.25												
FCC	.07	.25											
Supp	.29	.11	.72**										
FWB	-.12	.21	-.03	.12									
Freq	.26	-.15	.06	.14	-.04								
Degree	-.08	.17	.40**	.25	-.14	.42**							
IIEC	.09	-.04	.16	.18	-.06	.92**	.69**						
EEMBI	-.08	-.10	-.18	-.09	-.10	.67**	.17	.70**					
DMBI	.09	-.23	-.46**	-.30	.02	-.16	-.92**	-.45**	.16				
PAMBI	.33*	.02	.35*	.28	-.04	.20	.42**	.14	-.57**	-.54**			
HECS	.08	.17	.37*	.27	.21	-.29	.28	-.21	-.80**	-.61	.72**		
NurseY	.11	-.11	-.24	-.09	.36*	-.29	-.83**	-.52**	-.27	.62	-.23	.11	

Note. Fam Ed = family education, Fam Age = family age, Supp = nurse provided family support, FWB = family well-being, Freq = frequency of conflict, Degree = degree of conflict, EE = emotional exhaustion, Dep = depersonalization, PA = personal accomplishment, Nurse Y = nurse years in current ICU * $p = .05$, ** $p = .01$

Table 9.

Hierarchical Regression Analysis Summary for Variables Predicting FCC (N = 44)

Model	Step and Predictor Variable	β	R^2	Adj R^2	t	p
1	Step 1: Nurse years in ICU	-.238	.056	.034	-1.59	.12
	Step 2: Nurse years in ICU	-.281			-2.02	.05
	Organizational Resources	.401	.216	.178	2.89	.006
2	Step 1: Nurse years in ICU	-.238	.056	.034	-1.59	.12
	Step 2: Nurse years in ICU	.080			.45	.652
	Depersonalization	-.511	.216	.178	-2.89	.006

Table 10.

Hierarchical Regression Analysis Summary for Variables Predicting Family Well-being (N = 44)

Model	Step and Predictor Variable	β	R^2	Adj R^2	t	p
1	Step 1: Family Education	-.118	.014	-.012	-.73	.469
	Step 2: Family Education	-.160			-1.06	.297
	Nurse years in ICU	.387	.163	.117	2.56	.015
2	Step 1: Family Education	-.118	.014	-.012	-.73	.469
	Step 2: Family Education	-.140			-.89	.378
	Organizational Resources	.269	.091	.042	1.78	.084

Figures

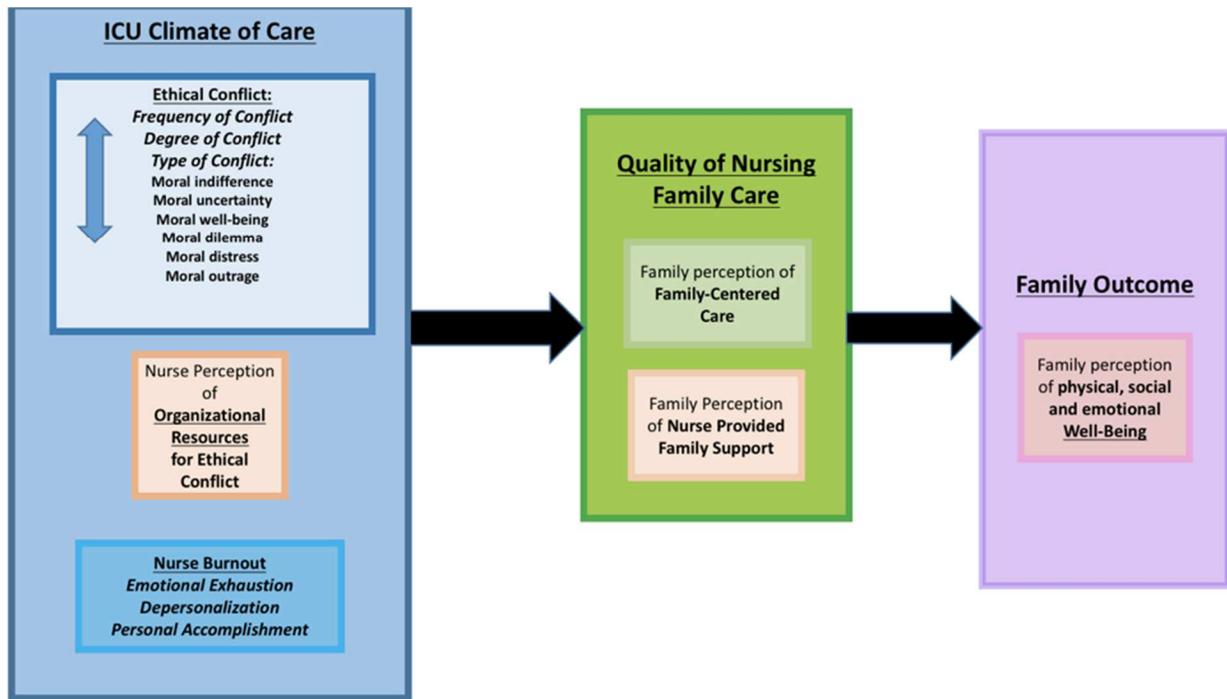


Figure 1. Conceptual model describing relationships among variables.

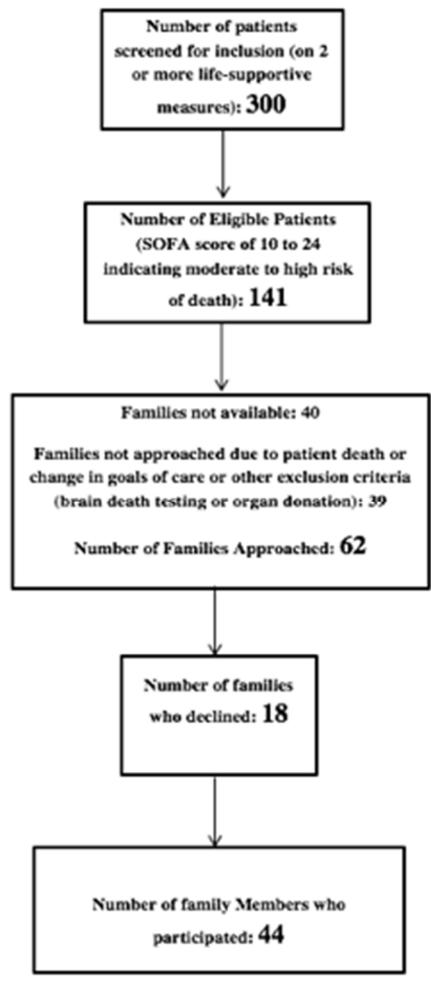


Figure 2. Family member enrollment.

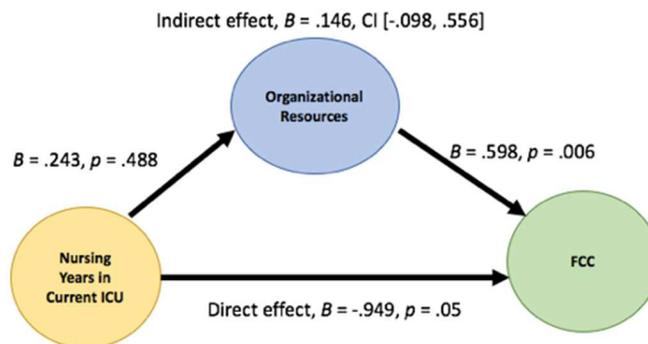


Figure 3. Path model 1

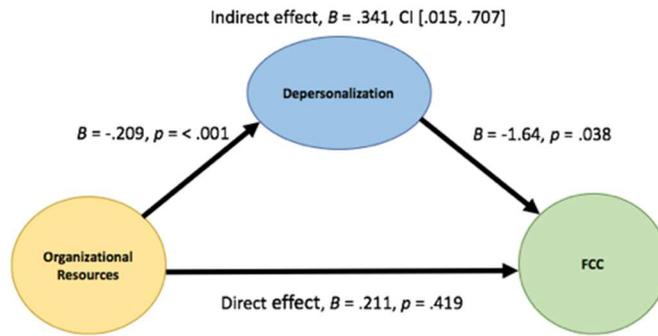


Figure 4. Path model 2

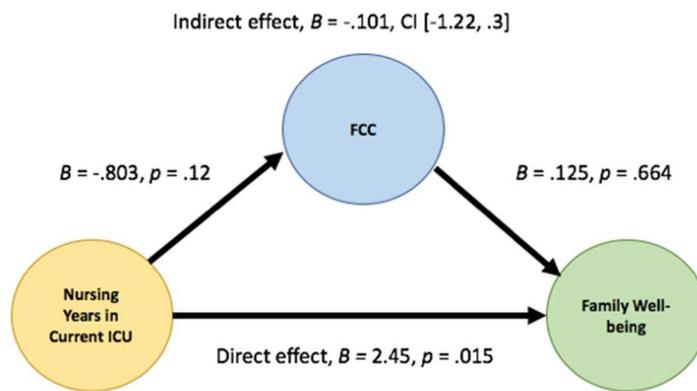


Figure 5. Path model 3

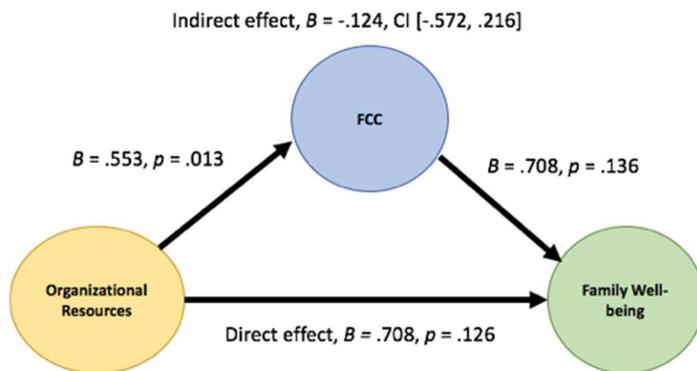


Figure 6. Path model 4

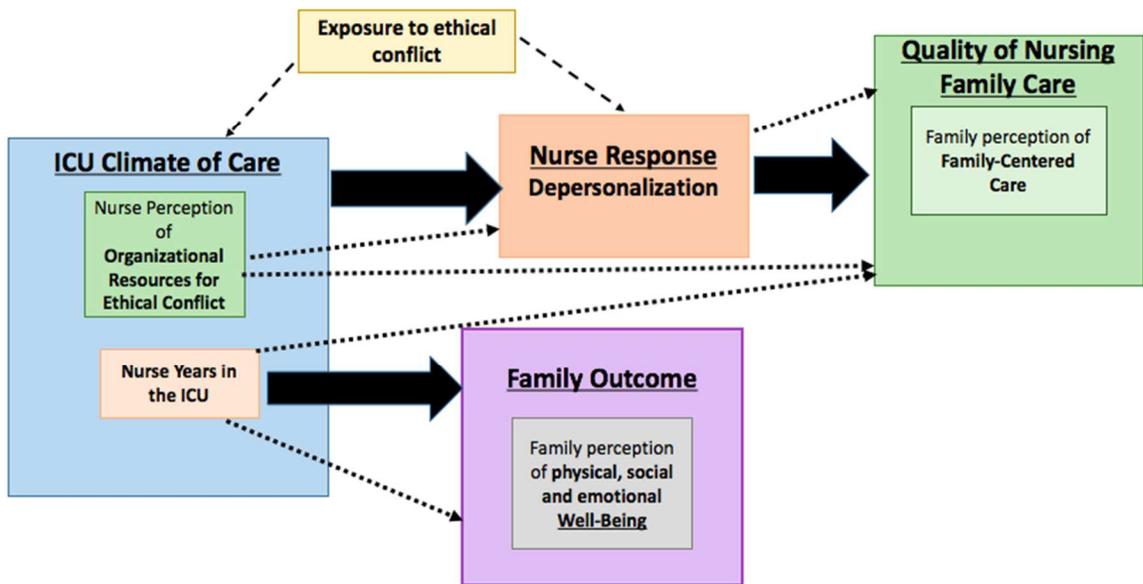


Figure 7. Revised conceptual model based on significant study findings.

Chapter V continues, with the next section addressing other findings specific to the family and nurse samples.

Family Sample Findings

Few studies have measured nurse provided family support, FCC and family well-being in the ICU. The current study indicates that families generally had a strong sense of FCC and nurse support; however, specific items related to family involvement scored lower than other items on both instruments. Examination of FCC and nurse provided support in the context of specific items supports that families may feel more confident about receiving information than being involved in the care of their family member. In prior studies mean FCC scores ranged from 2.32 to 3.5 (Mitchell et al., 2009; Wang et al., 2016). In the current study, FCC was between 2.6 and 4, with honest information scoring highly, and the lowest scoring item was family presence during procedures. Families rated nurse provided support higher than in prior studies (Hakio et al., 2015). Notably, nurse compassion was the highest scoring item on the instrument, while being encouraged to be involved in patient care was one of the lowest rated items.

Family well-being scores were moderate in the current study, and the aggregate for ICU families was similar to those reported in non-interventional ICU studies (Leske, 2000, 2003; Leske & Jiricka, 1998) and national norms of military ($M = 37.46$) and farming ($M = 42.67$) families (H. I. McCubbin & Patterson, 1983a). In a more recent study using family well-being as an outcome measure, the control group mean also was comparable ($M = 43.87$) (Leske et al., 2017) to the current study ($M = 40.64$); however, the focus of prior reports of family well-being in the ICU have been with trauma patients.

Significant differences in family reported well-being by specialty ICU were found. The MICU had the lowest overall family well-being scores ($M = 32.46$), and this value falls below

the means in some ICU studies and other national norms (Leske & Jiricka, 1998; Leske et al., 2017; H. I. McCubbin & Patterson, 1983a). However, the well-being scores were slightly higher than those reported by family members of patients with gunshot wounds ($M = 30.24$) (Leske, 2000, 2003). Notably, the MICU also was the ICU with the lowest FCC (statistically significant) and nurse provided family support scores. The patient population of the MICU may explain some of this variation. The prognostic uncertainty that accompanies medical illness may complicate family decision making (McAndrew & Leske, 2015; Palda et al., 2005) and increase stress. It may be that families in the MICU experienced lower FCC and nurse support due to complicated illness trajectories. However, other factors may explain the lower family well-being scores. The MICU is the largest ICU and receives between 250 and 300 admissions every month. Practice environment variables may be relevant to this finding, as inadequate staffing and resources may decrease nurses' ability to meet family needs.

It was reported in one study that the odds of experiencing ethical conflict in patient care were higher for health care professionals in medical ICUs, as well as for patients at higher risk of death (Studdert et al., 2003). Ethical conflict and burnout symptoms for MICU nurses in the current study may have affected overall nurse provided support and FCC perceived by family members. Notably, the MICU had the highest nurse depersonalization scores. Depersonalization had a negative relationship with FCC in the current study, indicating a possible negative influence on family member's perceptions of care; however, this requires further investigation.

Nurse Sample Findings

Nurses reported moderate ethical conflict, and high levels of depersonalization and emotional exhaustion, which is consistent with levels reported in the literature (Alharbi et al., 2016; da Silva et al., 2015; Dalmolin et al., 2014; Falcó-Pegueroles et al., 2016; Guntupalli et al.,

2014; Klopper et al., 2012; Losa Iglesias & Becerro de Bengoa Vallejo, 2013; Tekindal et al., 2012). However, nurses also reported high levels of personal accomplishment, and moderate reports of organizational resources for ethical conflict. High levels of personal accomplishment among nurse respondents was a unique finding in the current study. Others have reported low to moderate levels of personal accomplishment in ICU nurses (Alharbi et al., 2016; Aytekin et al., 2014; Guntupalli et al., 2014; Karanikola et al., 2012; Losa Iglesias & Becerro de Bengoa Vallejo, 2013; Merlani et al., 2011; Tekindal et al., 2012; Zhang et al., 2014). In a study comparing personal accomplishment between palliative care and ICU professionals, there were higher levels of personal accomplishment for those working in the ICU (Pereira et al., 2016). Although nurses experienced moderate levels of ethical conflict in the current study, nurses also may experience a sense of accomplishment in supporting families through difficult decisions about life-sustaining treatments.

The items that evoked the highest IEEC scores (exposure to ethical conflict) in the current study were conflicts related to inadequate analgesia and sedation, unnecessary tests for terminal processes, and carrying out family wishes that clash with those of the patient. Falcó-Pegueroles et al. (2016) also found that inadequate sedation and analgesia was the highest scoring IEEC item for Spanish nurses; however, inadequate nurse involvement in decision making and lacking means and time to discuss ethical conflict were additional high scoring conflicts. This may reflect the differences in the ethical climates of the nurse respondents in the current study and prior studies. Items that evoked a high percentage of moral distress in the current study were administering treatments that are too aggressive and cause patient suffering, followed by unnecessary tests for a terminal condition, which is consistent with prior moral distress literature (Allen et al., 2013; Corley, Elswick, Gorman, & Clor, 2001; Elpern et al., 2005;

Hamric & Blackhall, 2007; Hamric et al., 2012; Kleinknecht-Dolf et al., 2015; McAndrew et al., 2011). In contrast to the findings of Falcó-Pegueroles et al. (2015), in which moral outrage occurred most frequently, moral distress was more commonly selected in the current study. This may be attributed to differences in health care culture.

Organizational resources and personal accomplishment were positively correlated in the current study, and negatively related to emotional exhaustion and depersonalization. In a study that examined the nurse practice environment and burnout, personal accomplishment was low, as was nurse manager support, nurse participation in hospital affairs, and nursing foundations for quality of care (Klopper et al., 2012). Falcó-Pegueroles et al. (2016) found that when nurses were in a work environment that addressed ethical conflict, exposure to ethical conflict was lower. Thus, results from the current study and prior research suggest that a positive nurse perception of organizational resources may decrease negative attributes of burnout and enhance personal accomplishment.

Levels of organizational resources for ethical conflict (HECS) found in the current study are comparable to other studies. Sauerland et al. (2014) reported a mean total score of 94.39 (94.99 in the current study) and Pauly et al. (2009) a mean score of 3.48 ($M = 3.70$ in current study). It was notable that organizational resources scores were significantly different among the five ICUs. The resources and culture of the practice environment in each specialty ICU may explain the variation. Upon examination of each unit's subscale scores for the organizational resources variable, the CVICU had the highest scores for peer, patient, manager, hospital and physician domains. Notably, when examining the CVICU mean scores for exposure to ethical conflict, emotional exhaustion, and depersonalization, scores were lower, although only significantly lower for depersonalization. A positive organizational ethical climate in which

nurses perceive a sense of support for ethical challenges may be an important protective factor in the reduction of burnout among nurses.

Although nurses reported moderate levels of exposure to ethical conflict, high levels of depersonalization and emotional exhaustion, overall, the families who participated in the current study reported high levels of nurse support and FCC. This may be attributed to nurses' perceptions of organizational support and high levels of personal accomplishment. These factors may buffer the negative influence of ethical conflict and burnout on the delivery of family care. Other factors such as the educational level of nurses, satisfaction with their work, and specific types of available support may also explain the high scores for organizational resources and personal accomplishment. These factors require investigation in future studies.

Limitations

This was a nonexperimental, descriptive, cross sectional study that inherently does not control some threats to internal validity. Due to the exploratory nature of the phenomena under study it was not possible to use a design that would offer more control. The study does not provide information about causation due to the inability to determine the sequencing of variables, and results are interpreted with caution, as family and nurse responses were not matched. Because the primary goal of the current study was to determine if the ICU climate of care was associated with nursing family care, nurses and families were surveyed separately to increase sample size; however, the disadvantage of this approach was a less rigorous design that did not definitively link nurse and family responses. It should also be acknowledged the size of the nurse and family samples were small, limiting generalizability of study findings.

ICU nursing experience and family educational level were potentially confounding variables and addressed with statistical control (Polit & Beck, 2012); however, many

confounding variables exist in an exploratory study. Although it was not possible to use all as covariates, robust descriptions of sample characteristics were provided. Prior family experience in the ICU, the patient's risk of death (SOFA score), and the family member's relationship to the patient were recorded, as these variables could influence family responses. Although patient characteristics were not explored in relationship to family member responses in the current study, age, risk of death, and diagnosis of the critically ill family member are additional variables to consider in future studies.

It is notable that nurse years in the current ICU was a positively skewed variable, with a large portion of nurses with 2 years of experience or less. Although this reflects the current demographic of critical care nurses, the lack of normal distribution of this variable may have influenced relationships found. This also limits the generalizability of findings specific to nurse years in the current ICU.

Measurement is another consideration in this study. The MBI (Maslach et al., 1996) is a well-established tool used extensively in the literature to measure burnout; however, internal consistency values for depersonalization ($\alpha = .75$) and personal accomplishment ($\alpha = .77$) in the current study were less .80. Although these reliabilities are considered acceptable (Meyers et al., 2013), reliabilities above .80 were expected. A low alpha value increases error variance and could affect the significance of findings. Reliabilities for these scales in the current study were slightly higher than those reported in prior research (Glasberg et al., 2007, Zhang et al., 2014). Notably, burnout is not a unidimensional measure, and depersonalization, the scale with the lowest reliability has only 5 items. The lower reliability for the depersonalization scale is recognized as a limitation in the interpretation of the results.

An additional limitation was the timing of family responses. Families were asked to complete instruments within 48 to 96 hours of the critically ill patient's admission to the ICU. For family members who are in the ICU an extensive period of time, this initial response may not reflect their overall perspective of nursing family care quality, and their well-being scores may fluctuate through the progression of the ICU experience.

Participants may have altered their responses because they were aware they were in the study, or in response to the researcher. This threat was addressed by using scripted information about the study and clear directions about survey completion. In survey research, it is an assumption that respondents will be honest with self-report. Response bias is an inherent risk, and social desirability may lead to participant responses that reflect the ideal rather than truthful appraisal (Polit & Beck, 2012).

Demographics of the family and patient samples were similar to those of the hospital, but may not reflect the general population. Families and nurses with greater resources and positive experiences may have been more likely to participate. This is a limitation of a convenience sample with participant self-selection. Estimations of effect size were based on variables of interest in prior research; however, there was no definitive literature or pilot study to determine the effect size for power analysis limiting confidence in statistical conclusion validity.

It should be acknowledged that depersonalization and organizational resources each uniquely explained only 16% of the variance in FCC, and nurse years in the current ICU only 14.8% of the variance in family well-being. Other salient variables such as practice environment factors, nurse attitudes about family care, empathy, and family related factors such as pre-existing stressors, social support, coping skills, family cohesion, and other sources of

instrumental support may influence FCC delivery and family well-being to a greater extent and require investigation in future studies.

Family responses only reflect the perspective of one family member. Dyadic analysis was not possible due to an insufficient number of family member pairs. This limits knowledge about how the family unit may respond to the ICU experience. However, while there has been a movement towards collecting data from two or more family members (Feetham, 1991), this has not been the case in adult critical care. Part of the challenge in this environment is accessibility to two or more family members. Robinson (1995) asserts there are four levels of data that tell us about families: 1) individual family members 2) two family members 3) family group and 4) individual family system. However, all of these levels of data help us understand family as a whole, and contribute to family science. Individual family members are not ‘less than family’ and provide important insights about the concept of family (Robinson, 1995). Future studies may require multisite data collection as well as 24-hour coverage to increase the opportunity for more than one family member to participate.

Implications for Nursing Practice and Policy

The results of the current study indicate opportunities to improve nurse and family outcomes through unit and organizationally based support strategies. It is documented in the literature that families are not consistently engaged in patient care, or integrated into health care processes (Haines, Kelly, Fitzgerald, Skinner, & Iwashyna, 2017; Olding et al., 2016).

Development of improvement strategies to enhance nurse-family relationships and family engagement (Moss et al., 2016) in the ICU are important targets for clinical practice.

National guidelines exist for the provision of FCC in the ICU setting (Davidson et al., 2017); however, implementation of these recommendations in clinical practice varies among

critical care settings (Reeves et al., 2015; Slatore et al., 2012; Zaforteza, García-Mozo, et al., 2015). Only 28% of the nurse respondents believed they were practicing FCC at a high level (Ganz & Yoffe, 2012) in one study. Buckley and Andrews (2011) found that nurses had knowledge of family needs; however, there was still considerable variability in family care practices. Nursing family care knowledge is not enough to assure incorporation of FCC interventions into clinical practice. Translational research is required to determine cultural and systems factors that serve as barriers to the delivery of high quality family care.

The positive relationship between organizational resources and FCC found in the current study highlights the importance of the organization in facilitating the delivery of patient and family-centered care. It is documented in prior research FCC and family engagement is often challenged by hospital policies, clinician practices, and the general attitude of health care professionals (Agård & Maindal, 2009; Al-Mutair et al., 2013; Al-Mutair et al., 2014; Hetland et al., 2017; McConnell & Moroney, 2015). Similarly, in the current study items related to nurse-physician collaboration and hospital and leader support were lower scoring items on the organizational resources measure, signifying an opportunity for improvement. The findings from prior research and the current study indicate many factors may influence how nurses choose to involve families in the ICU, and subsequently, the degree of family engagement and delivery of FCC.

Lower scoring FCC items in the current study were related to family involvement and inclusion. Nurses at the bedside may encounter challenges when attempting to involve and support families while caring for a critically ill patient (Hetland et al., 2017; McConnell & Moroney, 2015), and represents a need for family support infrastructure. Although there are a limited number of studies have tested interventions to support nursing family care, families have

responded positively to structured programs that facilitate family engagement and support (Mitchell et al., 2016; White et al., 2012). Additionally, nursing education and training for FCC has been efficacious (Eggenberger & Sanders, 2016; Mitchell et al., 2009; Weis et al., 2015), especially when combined with a comprehensive family care program (Mitchell et al., 2016). Education about nursing family care, tools for family assessment and intervention, and organizational support for nurses providing family care are ways to enhance family care in the ICU (Buckley & Andrews, 2011; Söderström et al., 2003).

Organizational support for families

There is a need to enhance patient and FCC culture within health care organizations (Haines et al., 2017; Olding et al., 2016; Wiegand et al., 2013). Patient and family involvement must be a component of the organization's vision and mission. In prior studies ICU and organizational policies influenced the degree to which family members believed they could be involved in the care of their critically ill family member (Reeves et al., 2015), as well as nurses comfort with engaging families in patient care (Al-Mutair et al., 2014; Hetland et al., 2017). Similarly, in the current study the item 'policies to support nurses in the resolution of ethical conflict' scored the lowest, indicating nurses require greater support within the organizational domain. It is essential health care organizations develop policies to resolve ethical conflict and support the delivery of FCC.

In a recent study examining the effects of multiple family support interventions (family intake interview and emotional assessment, family diary and weekly psychosocial rounds), family members reported significantly higher quality of care after implementation of the family support program (van Mol et al., 2017). Notably, in this study families were assessed by trained ICU nurses, who were taught how to support the emotional expression of family members. As a

result of this program, structural family support became part of the ICU culture.

Organizationally driven programs of care and multicomponent support interventions are required to enhance nurse and family perceptions of support.

Organizational support for health care professionals

National turnover in the critical care nursing specialty is 17.7%, and 29.2% overall for nurses practicing for less than a year in the hospital setting (Nursing Solutions Inc., 2016). High turnover rates exacerbate the existing nursing shortage and is extremely costly, estimated at \$373, 200 for every percentage of change (Nursing Solutions Inc., 2016). Although turnover within the organization this study took place was lower than the national average, it is notable that 62.6% of the nurses reported they had considered leaving their position. Additionally, nurses reported high levels of emotional exhaustion and depersonalization, indicative of burnout. Loss of nurses has negative financial consequences for organizations. Nurses experiencing burnout who remain working may negatively influence patient and family outcomes.

Another important consideration related to patient and family care quality is the makeup of the nursing workforce in critical care. In the current nursing sample, approximately 50% had 2 years or less of ICU experience. This mirrors a national trend in which many new graduate nurses begin their practice in the ICU. With fewer experienced ICU nurses there is less mentoring and guidance for novice nurses. Staffing shortages resulting from ICU nurse turnover make it difficult to provide patient and family care. Organizations must develop ways to retain staff not only for financial gains, but to assure high quality patient and family care can be delivered by ICU nurses.

Many factors influence nurses' ability to form positive relationships with family members; however, organizational characteristics are documented in the literature as having

greatest impact (Bridges et al., 2013). The finding that organizational resources were related to FCC in the current study supports the importance of organizational factors. Organizational support for nurses experiencing ethical conflict and moral distress is imperative. The positive association found between moral distress and burnout in prior research (Dalmolin et al., 2014; Rushton et al., 2015; Shoorideh et al., 2015), as well as the relationship between ethical conflict and depersonalization found among nurses found in this study indicates an opportunity for intervention.

A potential strategy to decrease moral distress and burnout is early consultation with ethics experts who can guide health care teams through challenging cases, and facilitate better communication among team members and with the patient and family. McAndrew and Leske (2015) found in interviews with nurses and physicians that dialogue about team member's perspectives increases nurses' involvement in the decision-making process, and supports greater understanding and comfort with decisions made. Pavlish, Hellyer, et al. (2015) developed an early ethical conflict screening tool for nurses. Initial pilot studies demonstrated the tool is helpful and encourages nursing staff to seek out additional resources. This may decrease moral distress and subsequent burnout in nursing practice. Additionally, screening tools can improve outcomes for patients and families by facilitating a more collaborative decision-making process with the involvement of appropriate experts, such as nurse ethicists, bioethicists, and palliative care teams.

It has been documented that nurses have unmet needs for ethical support services (Kim, Seo, & Kim, 2016). Similarly, in the current study the items, 'Conflict is openly dealt with, not avoided' and 'The feelings/values of all parties in a patient care issue/problem are considered when choosing a course of action' were not highly rated items by nurses. It is recommended that

nurses have greater involvement in ethics committees, and to develop proactive ethics rounding in the ICU environment. In a randomized controlled trial, ethics consultations in the ICU were associated with significant reductions in hospital and ICU length of stay, and time on life-sustaining treatments for patients who died in the hospital (Schneiderman et al., 2003). An intervention that tested proactive ICU ethics consultation was associated with more frequent documentation of communication with families and decisions to stop life-sustaining treatments, as well as reduced ICU length of stay (Melvin, Robertson, & Bander, 1998). Despite the promise of proactive ethics rounds, implementation of this practice is rare in the ICU setting. This is an opportunity to engage nurses in ethical decision making and better support families through the process.

An additional strategy to support nurses and potentially families, is implementation of a moral distress consultation service (Hamric & Epstein, 2017). In one organization, moral distress consults used a structured template for health care professionals to discuss their concerns about a case and consider perspectives of all involved. A plan of action was developed to address the issues identified. In interviews with nursing staff who used the service, feedback included: a sense of empowerment, willingness to speak up about an ethical concern, and increased confidence. Other positive changes included greater staff engagement, increased collaboration, and improved unit communication (Hamric & Epstein, 2017).

In the current study, nurses as an aggregate reported high personal accomplishment scores, and personal accomplishment was positively associated with the degree of ethical conflict. This signifies the possibility that ethical conflict may strengthen nurses' professional identity as they work through problems in patient and family care. It has been identified by some in the moral distress literature there can be growth and development as a nurse addresses an

ethical problem, known as moral resilience (Rushton, 2016; Rushton, Schoonover-Shoffner, & Kennedy, 2017). Higher nurse resilience scores were associated with lower emotional exhaustion and increased personal accomplishment in one study (Rushton et al., 2015). However, in order for a nurse to develop moral resilience, there must be a strong ethical culture of support within the organization (Epstein & Hurst, 2017; Rushton et al., 2017). Epstein and Hurst (2017) assert that moral distress is a systems based problem, and to promote the concept of moral resilience could contribute to clinician blaming for the phenomenon, allowing organizations to ignore the devastating effects to patients, families and health care professionals (Epstein & Hurst, 2017). It is vital that strategies to support frontline staff dealing with complex ethical issues are aimed at the system of care rather than individuals. Reflection on ethical problems through interprofessional collaboration and development of a strong organizational ethical infrastructure is the vehicle to improve nurses' sense of support, and thereby enhance patient and family care.

Healthy Work Environments

Enhancing the work environment may be another way to support family care. In the current study nurse-physician collaboration was the lowest rated domain for the organizational resources variable. Interprofessional conflict during difficult cases may lead to unprofessional behavior that undermines family care (Bruce et al., 2015; Varcoe et al., 2012; Weinzimmer et al., 2014). Targeting ways to enhance nurse-physician collaboration may decrease the imbalance of power in relationships among multidisciplinary teams (Zaforteza, Gastaldo, et al., 2015), and improve staff and patient/family outcomes. There is evidence that family experiences are more positive when there are strong collaborative relationships among health care professionals (Reeves et al., 2015).

The organizational resources (HECS) scores in the current study are a reflection of the level of perceived unit and organizational support for nurses and the overall culture of care within the organization (Olson, 1995). In the current study, emotional exhaustion and depersonalization were negatively related to organizational resources, and there was a positive relationship between organizational resources and personal accomplishment among nurses. Interventions that target the work environment and enhance organizational level support systems for nurses may decrease emotional exhaustion and depersonalization, and bolster a sense of personal accomplishment among nurses. Organizational cultures that promote the attributes of trust, respect, commitment, empowerment, collaboration and honesty foster healthy work environments (American Association of Critical-Care Nurses, 2016; Huddleston, 2014; Shirey, 2006). The healthy work environment standards established by the American Association of Critical-Care Nurses aligns with the American Nurses Association Code of Ethics, and provides a roadmap for the creation of supportive practice environments that optimize patient, family, and staff outcomes (American Association of Critical-Care Nurses, 2016). These standards include 1) skilled communication, 2) true collaboration, 3) effective decision-making, 4) appropriate staffing, 5) meaningful recognition, and 6) authentic leadership. Healthy work environments are a vital component of high quality patient and family care, as well as staff recruitment and retention (American Association of Critical-Care Nurses, 2016; Huddleston, 2014; Wiskow, Albrecht, & Pietro, 2010).

In the current study manager support was not rated as highly as peer support within the domains of the organizational resources measure. A lack of leader support is frequently cited in the literature as a problem in clinical nursing practice (Pavlish, Brown-Saltzman, Fine, et al., 2015; Pavlish, Brown-Saltzman, Hersh, Shirk, & Nudelman, 2011; Pavlish, Brown-Saltzman,

Hersh, Shirk, & Rounkle, 2011). Leaders may be unaware of the day to day challenges nurses face and thus, cannot be effective supporters or champions for those they serve. Requiring nurse leaders learn ways to empower and support nurses will improve nursing advocacy in the organization and may enhance patient and family care.

Nurses need a strong voice and are often underrepresented at executive levels of hospital administration. Nursing leaders and nurse executives must learn the importance of their role in changing the landscape of health care delivery, and assuring professional nursing values are embedded in organizational decision-making. It is recommended that organizations provide mandatory training for health care leaders and executives about practice environment issues, moral distress, and burnout utilizing a framework such as SUPPORT-See it; Seek it out; Understand it; Pay attention and address the workplace climate; Promote receptive environment and engagement; Open dialogue, Reflect, evaluate and revise; and Transform the environment (Pavlish, Brown-Saltzman, So, & Wong, 2016).

Implications for Nursing Education

In the current study a negative relationship was found between nurse years in the ICU and FCC, and a positive relationship between nurse years in the ICU and family well-being. This may point to an opportunity to better educationally prepare and train nurses in an effort to improve the delivery of FCC, as well as enhance family well-being.

Inadequate education and training for interactions with families is cited in the literature as a barrier to nursing family care (Buckley & Andrews, 2011; Chesla & Stannard, 1997; A. Engström & Söderberg, 2007; Holden et al., 2002; Shirazi et al., 2015; Söderström et al., 2003; Stayt, 2007, 2009). There is need for educational strategies that teach the process of reflection-in-action and reflection-on-action (Tanner, 2006). This is the vehicle to connecting knowledge

related to assessment, intervention, and patient/family response that propels nurses forward towards a holistic understanding of those for whom they care (Benner, Tanner, & Chesla, 1992; Tanner, 2006).

The landscape of critical care nursing is changing. In prior years, nurses had the opportunity to learn from experts, observing their interactions with patients and families. Today, fewer expert nurses are available to mentor novices. Many new graduate nurses will become ICU nurses, and providing opportunities to prepare for potential communication challenges and difficult interpersonal exchanges may optimize their delivery of family care, and their job satisfaction.

Nursing curricula must incorporate the concepts of ethical conflict, moral distress, burnout, support resources, patient and family engagement and the delivery of FCC in acute and critical care environments. These concepts require ongoing dialogue to assure nurses are aware of these issues before they enter the clinical practice setting. With a large portion of critical care nurses functioning as a novice or advanced beginner (Benner, 1984; Benner et al., 1996), it is vital nurses are taught the foundations of clinical reasoning, and the value of reflective practice (Tanner, 2006) before they begin their nursing career. Utilizing the Clinical Judgement Model to guide simulations in the classroom setting may be a mechanism that supports learning typically experienced in the clinical practice environment (Tanner, 2006). Role playing and simulation training may be the best techniques to prepare nurses for the complex family and interprofessional interactions they will encounter in these care settings. Nurses gain the most knowledge from situations in which they did not pick the best course of action (Benner, 1991); therefore, simulation provides a safe place to discuss clinical decisions and their implications for patients and families. Further, the development of relationships with families is dependent upon

clinical reasoning capabilities- you cannot meet family needs if unable to anticipate those needs and understand family responses. Curriculums must emphasize family care as much as direct patient care in acute and critical care settings.

Within organizations, policies, processes, and overall infrastructure must create a positive ethics of care to support nurses through the complexities of ethical decision making within healthcare systems. Professional development opportunities should be offered that address ethical conflict, burnout, and the implications for nurses, patients, families, and organizations. Programs that focus on training and education for nurses have a high yield. In a recent study, ICU nurses participated in an 8-hour long workshop to address goals of care discussions with family (Milic et al., 2015). A significantly higher level of skill and confidence was reported by nurses in the intervention when compared to those in the control group. Similarly, Eggenberger and Sanders (2016) found that a 4-hour workshop that involved the use of digital family and nurse stories and role playing increased nursing confidence, skill and knowledge. Nurses who participated in this intervention also articulated they perceived a greater importance of their role in caring for family members (Eggenberger & Sanders, 2016). Devotion of organizational resources to the support and development of ICU nurses is a vital component of high quality patient and family care.

Implications for Nursing Research

The current study fills an important gap in the literature by addressing the relationships among ethical conflict, burnout, FCC, and family well-being. The organizational resources variable provided a valuable measure of how the organization may support or challenge the resolution of ethical conflict in clinical practice. Ethical conflict and resultant moral distress and burnout are a manifestations of health care culture and systems (Epstein & Hurst, 2017; Huffman

& Rittenmeyer, 2012). Measurement of organizational support is imperative for analysis of ethical conflict within critical care. Although many studies have measured ethical conflict and burnout, a limited number of studies have addressed organizational and practice environment factors and their relationship with patient and family outcomes in the ICU. This is a critical area of research development, as interventions may not be effective if they are only targeted only at the responses of nurses or family members.

The revised conceptual model (Figure 9) is a guide for the design and selection of variables in future studies using larger samples sizes. Determining whether depersonalization is a mediator between organizational resources and FCC is required. Additionally, further analysis of the variable nurse years in the current ICU is also warranted. It may be a salient variable relevant to the climate of care, and its relationship to FCC and family well-being requires more investigation. Exploration of nurses' perception of FCC delivery in addition to the perspectives of family members is also necessary. This will provide information about the congruence or incongruence between nurse and family member FCC ratings, as well as aspects of FCC that may require additional study.

There were significant relationships among organizational resources, depersonalization, and FCC, and depersonalization was positively related to the nurse's exposure to ethical conflict in the current study. These findings are an indication the ethical practice environment may be influential in the development of nurse burnout and delivery of nursing family care. Ethical and general support resources for families and nurses require development and testing in future studies. Organizationally based resources in the ICU such as early palliative care and ethics consults, guidelines and organizational policies related to life-sustaining treatments, and greater inclusion of nurses in decision-making must be examined in relationship to nurse, patient and

family outcomes. Larger samples and more powerful research designs are required to understand these relationships and the implications for nursing family care.

In the current study, no relationship was found between FCC and family well-being. This did not support the conceptual framework and requires further analysis using additional measures to explore how the delivery of family care may or may not be related to family outcomes in the ICU. Others have found family presence during resuscitation (a FCC intervention) enhanced family well-being (Leske et al., 2017). Understanding the relationship between family care delivery and family outcomes is critical and more research is needed in this area.

Another consideration in the current study was the measure of burnout. Although the MBI (Maslach et al., 1996) tool has been used extensively to measure burnout in the literature, it is notable that the reliability for the depersonalization scale was not optimal in the current study or in prior research (Glasberg et al., 2007; Zhang et al., 2014). There are only 5 items in this scale. There may be other aspects of the depersonalization phenomenon that are not being measured with the existing instrument. The concept of depersonalization among ICU nurses requires additional exploration to further define the concept and guide measure development.

It is also notable that measures used in the current study have not been implemented in repeated measures study designs with the exception of FCC (Mitchell et al., 2009). This is an important consideration for future interventional studies. Findings in the current study point to an opportunity to reduce burnout and potentially enhance FCC delivery through support mechanisms that assist nurses and families in the resolution of ethical conflicts. However, it is imperative that tools to measure ethical conflict, moral distress, burnout, and FCC are suitable for repeated measures. This also applies to family outcome variables, such as well-being. The

Family Well-being Index (McCubbin & Patterson, 1983a) is not appropriate as a repeated measure in its current form.

The current study aimed to measure the family's perception of the quality of nursing family care. Few studies have measured FCC and nurse provided family support. Although nurse provided family support was not used in analyses in the current study, it remains an important aspect of nursing family care. Further development and testing is necessary for the FCC-Adult Version and nurse provided family support measures. It is well documented that families consider nurses a vital form of support (J. Adams et al., 2014; Karlsson et al., 2010; Segaric & Hall, 2015; Vandall-Walker & Clark, 2011). However, there is a paucity of measures to examine nursing contributions to family care. Exploration of FCC and nurse provided family support from the perspectives of nurses and families is required. Family nursing care is amenable to intervention, and may be an appropriate avenue for improving family outcomes in future research. Reliable and valid measures of these concepts are needed to advance the science of ICU nursing family care.

The ICU family literature has focused primarily on adverse family psychological outcomes (Anderson et al., 2008, 2009; Day et al., 2013; Fumis, Ranzani, Faria, & Schettino, 2015; Hickman & Douglas, 2010; McAdam et al., 2010; McAdam et al., 2012). Although this information is needed to determine ways to lessen negative psychological symptoms, there is an inadequate amount of research examining family growth and development and enhanced family resiliency after an ICU experience. Further, it has been asserted that the focus on family vulnerability may undermine the cultural shift toward families as active partners in health care systems (Olding et al., 2016). Understanding protective family factors, and finding ways to leverage existing family resources is an important area for research development. The current

study examined the outcome of well-being to address this gap in the family science; however, there may be opportunities to modify the well-being measure used, as the FWBI (H. I. McCubbin & Patterson, 1983a) is not specific to critical care. It is recommended that a qualitative approach is utilized to explore family members' perceptions of family support, family well-being, resiliency, and family growth and development to develop and revise existing family measures.

Currently, there is a conceptual muddling of the terms family involvement, patient and family engagement and FCC in the literature. It has been theorized that patient and FCC is a vision of what health care should be-active partnerships among patients, families and health care professionals (Carman et al., 2013). Patient and family engagement is defined as the behaviors that create such a partnership across levels of the health care system including direct care, organizational governance, and policy (Carman et al., 2013). However, multiple conceptualizations and definitions of patient and family engagement exist (Cene et al., 2016). A recent definition of patient and family engagement in the ICU is, "...An active partnership between health professionals and patients and families working at every level of the healthcare system to improve the health and the quality, safety, and delivery of healthcare" (Brown et al., 2015, p. 359). The five key concepts Brown et al. (2015) include are collaboration, decision-making, information sharing, activation and participation, and respect and dignity. However, many of these concepts also are components of FCC. In a recent review, findings revealed a need for further research about how family involvement influences patient and family outcomes, and the importance of the role of the nurse in the provision of direct family involvement in patient care (Liput, Kane-Gill, Seybert, & Smithburger, 2016). There is a need to theoretically and empirically define patient and family engagement, involvement and FCC, and the

relationship among these concepts in critical care. Further, the unique contributions of nurses must be determined.

Hetland et al. (2017) developed the Questionnaire on Factors that Influence Family Engagement (QFIFE) to explore nurse variables that facilitated and hindered family engagement. Development of a tool to measure family engagement in the ICU from the perspective of families is currently lacking. Additionally, measuring the level of agreement among nurses and family members for both family engagement and FCC is necessary for the development of interventions in this area. If family engagement is a determinant of FCC interventions, future studies need to measure the relationship between family engagement and FCC to develop theory in this area of science. Additionally, nursing research must determine the specific patient/family outcomes influenced by patient and family engagement behaviors and FCC interventions in the ICU.

There is an opportunity to increase our knowledge about the family perspective of support provided by nurses and organizational systems through qualitative research designs. Family system perspectives of support are needed, including the types of support received and ways to enhance family support within health care organizations. Additionally, an examination of health care executives and leaders, as well as frontline health care professionals' attitudes about family engagement and FCC are required to explore potential gaps in the vision of the family experience and the reality of family care delivery in the ICU. Mixed method longitudinal studies are required to explore family perspectives of the ICU experience at various points in time to discern how family growth may occur, and optimal times to provide support interventions. Finally, nurse and family support programs must be tested in future studies using

factorial designs. Multilevel interventions may help determine what components are most beneficial for family care, and the contributions of multifaceted support strategies.

Conclusion

This exploratory study provided the groundwork for the examination of nursing climate of care variables, the quality of nursing family care, and various family outcomes. Larger, more representative samples are needed in future studies to determine the relationships among these variables. The family is vital to patient health and well-being; however, this is often overshadowed by the patient focus in health care, particularly in acute and critical care environments. Few family studies conducted in the ICU measure positive family outcomes, with the majority examining the negative psychological symptoms of individual family members. The focus on family well-being in this study is consistent with a strength based approach to family research. Empowering nurses and families in critical care through structured organizational support is a productive path to achieving high quality nursing family care and positive patient and family outcomes. Future research must examine nursing care culture, organizational support mechanisms, and determine how specific environments of care affect nurses, patients and families in the ICU setting. This preliminary study will inform the progression of a program of research that aims to assure family inclusion and support in all aspects of health care delivery.

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Appendix A: Evidence Table

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
A. Adams, Mannix, and Harrington (2017)	FCC and nurse provided family support	Thematic review of the literature from 2002 to 2014	17 studies	Four themes-nurses are: information and communication facilitators, family support providers, non-supportive behaviors, and the need to improve nurse communication skills
J. Adams, Anderson, Docherty, Steinhauser, and Bailey (2014)	Nurse provided family support	Qualitative, descriptive	Observation-4 hours per day, 17 cases 42 interviews with 32 family members from adult ICU in Southeast United States	Five main categories related to nurse provided family support: demonstrating concern, building rapport, professionalism, factual information, supporting decision-making
Agård and Harder (2007)	Family well-being, nurse provided family support	Qualitative, descriptive	7 interviews with family members from neurosurgical and general ICUs in Denmark, grounded theory	Three main themes: enduring uncertainty, putting self aside, and forming personal cues
Agård and Lomborg (2011)	FCC and nurse provided family support	Qualitative, descriptive	11 semistructured interviews with Danish ICU nurses	Nurses tried to balance the needs of all involved (clinical leadership) but patient was primary focus. Assessment based on individual and situational aspects of patient care and family member relationships
Agård and Maindal (2009)	FCC, nurse provided family support	Cross-sectional, descriptive, correlational, survey	68 nurses from Medical/Surgical ICU in Denmark (RR = 61%)	Significant linear correlation between nurses perceived outcome expectations and attitude towards involving family members in certain care activities ($B = .3$, $p < .001$, 95%CI [.12, .4])

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			Research developed self-efficacy instrument	
Aghabary and Nayeri (2016)	Burnout, ethical conflict	Qualitative, descriptive	20 Iranian ICU nurses from 4 teaching hospitals in Tehran	Need to differentiate between medical futility and futile care, experiencing burnout and perceived ineffective treatments influence nurses' morale and a sense of indifference towards terminally ill patients
Al-Mutair, Plummer, Brien, and Clerehan (2013)	FCC	Review of literature from 2000 to 2010	30 studies	Quantitative studies all used Critical Care Family Needs Inventory, Assurance and information most important followed by proximity, comfort and support. Qualitative research highlights families need for hope and accurate information. Family involvement in routine care associated with satisfaction, emotional reassurance and decreased anxiety. Families want to be present during resuscitation and invasive procedures despite differing beliefs among health care professionals
Al-Mutair, Plummer, Brien, and Clerehan (2014)	FCC	Cross-sectional, descriptive, survey	Health care professionals in 8 Medical Surgical ICUs in 8 different hospitals in Saudi Arabia using researcher developed questionnaire about attitudes towards family involvement, RR = 41.6%	57.9% believed family presence could impact positively on patient's treatment progress, 63.3% felt there were able to involve family members, and 64.5% felt they had enough training to meet family needs. Noted need for guidelines, policies, and education to incorporate family into resuscitation and invasive procedures
Alharbi, Wilson, Woods, and Usher (2016)	Burnout	Cross-sectional, descriptive, correlational, survey	150 ICU nurses from 3 hospitals in Saudi Arabia, RR = 54%	High levels of burnout (emotional exhaustion $M = 35.19$, $SD = 8.92$, depersonalization $M = 16.34$, $SD = 5.24$) and moderate personal accomplishment
			MBI	

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			Job Satisfaction Survey	Burnout accounted for 10% of variance in job satisfaction, and job satisfaction was negatively related to emotional exhaustion ($\beta = -.41, p < .05$)
Anstey, Adams, and McGlynn (2015)	Ethical conflict	Cross-sectional, descriptive, correlational, survey	1,363 ICU nurses and physicians in California Instruments used in APPROPRICUS study (inappropriate care), RR = 38%	80% of sample believed reason for inappropriate care was requests of family 51% reported inappropriate treatment was distressing and 68% did not believe they could change the situation (nurses = 73%, physicians = 47%) Lack of collaboration between nurses and physicians associated with higher incidence of perceived inappropriate treatment (OR = 1.84, 95% CI [1.21, 2.80])
Aslakson, Curtis, and Nelson (2014)	FCC, ethical conflict, family well-being	Review of literature up until 2014	Studies from North American and Europe-included peer-reviewed original scientific articles, consensus statements, guidelines, and reviews	Multiple barriers to integration of palliative care in the ICU. ICU approaches that incorporate family-centered communication, support and active listening associated with increased family satisfaction, decision-making, and psychological well-being
Aslakson et al. (2012)	Ethical conflict	Qualitative, descriptive	32 nurses from surgical, cardiac, surgical and general ICUs in Maryland, content analysis	Discomfort discussing patient prognosis, families are given false hope and providers have false hope. Unclear what futile care is.
Atabay, Çangarli, and Penbek (2015)	Organizational resources, ethical conflict and moral distress	Cross-sectional, descriptive, correlational, survey	201 nurses working in a Turkish hospital, Ethical Climate Scale and MDS-R (intensity only), RR = 72%	Rules positively correlated with organizational constraints ($r = .192$) and lack of time and resources ($r = .259$) Organizational interests ($r = .252$) and individualism ($r = .210$) positively correlated with misinformed and overtreated patients

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Attia, Abd-Elaziz, and Kandeel (2013)	Ethical conflict, organizational resources	Cross-sectional, descriptive, survey	70 nurses from 4 ICUs in Egypt (oncology, coronary, hepatic and surgical), adapted tool on perceptions of barriers and supportive behaviors when provided end-of-life care to patients and families, RR note provided	Barriers included: heavy workload (81.4%), poor ICU design (67.1%) liberal family visiting (51.4%), family does not understand life-sustaining treatment (65.7%), lack of nurse education and training for family care (60%), not knowing patient wishes (60%) Significant differences in barriers based on ICU type ($\chi^2 = 8.194, p = .042$), surgical and hepatic ICUs with greater barriers
Auerbach et al. (2005)	Family well-being, FCC	Cross-sectional, descriptive, correlational, survey	40 family members from an SICU in Virginia, Critical Care Family Needs Inventory, Acute Stress Disorder Scale, Brief Symptom Inventory, and Impact Message Inventory, Life Orientation Test, RR = not reported	Unmet family needs included information about patient's condition, why things were being done, and absence of explanations about medical equipment Emotional distress was high ($M = 44.65, SD = 15.45$), similar to those who are admitted for acute PTSD for inpatient psychiatric care Optimism and needs as met had a significant relationship ($\beta = -.54$) – the higher the optimism the less needs reported as unmet
Auriemma et al. (2015)	FCC	Qualitative, descriptive	Interviews with 19 patients and 26 family members from a medical ICU in Philadelphia, Cultural consensus analysis	Family members of patients who survived used different terms than those who did not. Survivors used the terms suffering, busy, environment and team, while those of patients who died used the terms sadness, professional and hope
Aytekin, Kuguoglu, and Yilmaz (2014)	Burnout, organizational resources	Cross-sectional, descriptive, correlational, survey	80 neonatal ICU nurses from 2 hospitals in Turkey, MBI, WHO Quality of Life-BREF, RR = 94%	Moderate emotional exhaustion ($M = 14.9, SD = 5.53$), low depersonalization ($M = 3.87, SD = 2.77$), and moderate personal accomplishment Emotional exhaustion negatively correlated with psychological environment ($r = -.527$) and social relationships ($r = -.423$)

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Azoulay et al. (2009)	Ethical conflict	Cross-sectional, descriptive, survey	323 ICUs in 24 countries, Questionnaire developed based on Delphi approach, RR = 81%	<p>1/3 of conflicts between staff and family members, 2/3 were conflicts among team</p> <p>Main source of conflict related to end-of-life care</p> <p>Conflicts perceived as severe by 53%, dangerous by 52%, and harmful by 83%</p> <p>Less conflict when nurse-physician collaboration on patient symptom control</p> <p>Conflicts with family members more likely to result in transfer to another ICU, limitation of visiting hours and intensified communication with family members</p>
Bai et al. (2015)	Organizational resources	Cross-sectional, descriptive, correlational, survey	706 nurses working in ICUs from 3 cities in China, from 14 hospitals, Essentials of Magnetism II, Job satisfaction and quality of care single items, RR = not reported	<p>Job satisfaction correlated with the quality of care ($r = .37, p < .01$)</p> <p>MICU had healthiest work environment, and surgical ICUs least healthy</p> <p>MICU had higher reported resources for education, autonomy, nurse management support, patient-centered values and job satisfaction</p>
Bailey, Sabbagh, Loiselle, Boileau, and McVey (2010)	FCC, Family well-being, nurse provided family support	Cross-sectional, descriptive, correlational, pilot study	39 family members from medical-surgical ICU in Canada, Critical Care Family Needs Inventory, State Trait Anxiety Inventory, Continuous Quality Improvement Androfact, RR = 87%	<p>Informational support $M = 55.41, SD = 13.28$ (possible score of 20-80)</p> <p>Positive correlation between informational support and satisfaction with care ($r = .741, p < .001$)</p> <p>Lowest scoring satisfaction items = encouraged to participate in care and ask questions</p>
Baird, Davies, Hinds, Baggott, and Rehm (2015)	FCC	Qualitative, descriptive	7 parents and 12 nurses from a Pediatric ICU in the	For nurses and parents, the rules of the ICU were a major focus. Family members tried to understand and

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			United States, Grounded theory	learn the rules, while nurses tried to enforce them. There were explicit and implicit rules. There were inconsistencies in how nurses interpreted the rules, leading to family member frustration and problems in the nurse-family relationship
Baumhover and May (2013)	Family well-being	Review of literature	Concept analysis (Walker and Avant technique) of families in ICU as vulnerable population	Small amount of literature in this area Four attributes: exposed to burden (emotional, psychological and physical symptoms), defenseless (lack of participation places at risk for harm), unprotected (self-neglect), and susceptible to harm, injury or persuasion (unreliable information) Antecedents: powerlessness, lack of access to patient and information Negative consequence: Post Intensive Care Syndrome-Family Positive consequences: growth and change, stronger family connections, endurance, resilience, strength, autonomy and empowerment
Blom, Gustavsson, and Sundler (2013)	FCC, Nurse provided family support	Qualitative, descriptive	7 family members from ICUs in Sweden, Phenomenology	Meaningful and important for families to be present and participate in the care of their critically ill family member It was distressing to family members to be excluded from participation, they felt insecure when not allowed to be near the patient Families needed support from nurses and other health professionals, and need for additional external support Vulnerability: because family members depended on nurses, this made participation complicated Family members described situations in which their family member was treated as an object, not as a person

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Borhani, Jalali, Abbaszadeh, and Haghdoost (2014)	Organizational resources, ethical conflict	Cross-sectional, descriptive, correlational	275 nurses from 4 hospitals in Iran, Victor and Cullen's Ethical Climate Questionnaire, Meyer and Allen's Organizational Commitment Questionnaire, RR = 91%	For the type of hospital ethical climate, the most common was professionalism ($M = 13.45$, $SD = 3.68$), followed by Rules ($M = 13.41$, $SD = 4.01$), Caring ($M = 12.92$, $SD = 3.95$), Independence ($M = 11.35$, $SD = 3.88$) and Instrumental ($M = 8.93$, $SD = 2.95$) Ethical climate of professionalism was positively correlated with affective (identify with organizational values) ($r = .16$) and normative commitments ($r = .105$) (duty to stay in organization) Ethical climate of caring positively related to affective ($r = .260$) and normative ($r = .119$) Ethical climate of independence (follow own moral beliefs) positive associated with affective commitment ($r = .266$)
Bosslet et al. (2015)	Ethical conflict, organizational resources	Policy Statement, Review of literature	American Thoracic Society, American Association of Critical-Care Nurses, American College of Chest Physicians, European Society of Intensive Care Medicine and Society of Critical Care	Health care organizations should implement strategies to reduce treatment related conflicts, the term "potentially inappropriate" should be used rather than futile care to describe interventions that may meet patient or family goal but may not be ethically justified by clinicians, must be a fair process for conflict resolution, and clinicians should not provide futile interventions (no ability to accomplish a physiologic goal)
Bridges et al. (2013)	Nurse provided family support, organizational resources, FCC	Meta-ethnography	18 studies	Many factors influence nurses' relationships with families; however, organizational characteristics are most impactful When nurses have a lack of support in the development of nurse-family relationships they become disengaged and depersonalize patients/families

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Buckley and Andrews (2011)	Nurse provided family support, FCC	Cross-sectional, descriptive, correlational	48 ICU nurses in Ireland, Researcher developed tool to measure nurse knowledge of family needs and practices, RR = 87%	No relationship between nurse knowledge and family care practices (high level of knowledge with a broad range of family care practices) Only 4.2% of sample could rank family needs in order of importance, small portion of sample asked family members to participate in care and 95% of the sample needed more knowledge to address family care in the ICU
Butler, Willetts, and Copnell (2015)	FCC, Nurse provided family support	Qualitative, descriptive	5 Pediatric nurses from ICU in Australia, Thematic analysis	Nurses experienced role confusion about their responsibilities in family care, conflict related to care of the child between nurse and family, withholding information based on family members coping abilities, competing values of the nurse and family, and the institutional, physical and cultural environment affected family care. There was no consensus on parent involvement in care
Carlson, Spain, Muhtadie, McDade-Montez, and Macia (2015)	FCC, Nurse provided family support	Cross-sectional, descriptive, correlational	29 spouses or 1 st degree relatives of severely injured patients in a surgical ICU in the United States, Family Satisfaction with Critical Care Questionnaire, Beck Depression Inventory, and Screen for posttraumatic stress symptoms	Staff skills were rated significantly higher than frequency of communication ($t = 5.62$), information needs being met ($t = 4.89$) and support ($t = 4.24$) Moderate correlation between depression and rating of satisfaction ($r = -.57$), informational needs ($r = -.52$), and staff skills ($r = -.53$), and between PTSD symptoms and satisfaction ($r = -.43$), frequency of communication ($r = -.43$), and staff skills ($r = -.37$).
Chesla and Stannard (1997)	Nurse provided family support	Qualitative, descriptive	130 nurses from 8 hospitals in Western United States, 48 nurse observations, Interpretive phenomenology	Problems related to family care were not related to specific nurses-it was largely related to the health care setting philosophy and structures There were 5 nursing approaches that negatively influence family care: distancing the family from the

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				<p>patient, the nurse distancing self from patient and family, nurses describing the family as pathological or problematic, not taking responsibility for family care and lack of knowledge about family systems</p> <p>Nurses tried to control the family and the families tried to control the environment of care</p>
Chui and Chan (2007)	Family well-being	Cross-sectional, descriptive, correlational, survey	133 family members from an ICU in Hong Kong, Impact of events scale (stress), F-COPES (coping strategies), RR = not provided	<p>There were high levels of stress ($M = 25.1$, $SD = 8.3$)</p> <p>Stress moderately correlated with coping strategy used ($r = .50$)</p> <p>Family members who were parents had significantly higher levels of stress ($F = 2.5$, $p = .04$)</p> <p>The longer the ICU stay the higher the perceived stress</p>
Ciufo, Hader, and Holly (2011)	FCC	Systematic review of literature 1998 to 2009	Determined if visitation models were consistent with patient and FCC -13 studies included	Flexible visiting beneficial to families; however, visiting hours viewed as guidelines and influenced by nurse and patient. Families comforted by nurses willing to explain and teach about patient care. Some evidence that nurses believe their role was to care for patient without family interference. Nurses need to control the environment sometimes related to protecting the patient
Cobanoğlu and Algier (2004)	Organizational resources, Ethical conflict	Qualitative, descriptive	22 Nurses and 20 physicians from hospitals in Turkey, Focus groups	<p>Ethical problems perceived by nurses were related to end-of-life decision making (46.2%), communication and hierarchy (43%), and social problems (10.9%)</p> <p>Social problems: limited resources, inadequate staffing and social situation of patient</p>
Cronqvist, Theorell, Burns, and Lützén (2004)	Organizational resources, Ethical conflict	Qualitative, descriptive	36 ICU nurses from Sweden, Content analysis	<p>Most ethical concerns related to older patients receiving advanced therapies</p> <p>Nurses described inappropriate care for dying patients</p> <p>Nurses had to balance their moral nursing obligations with work related responsibilities</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Cypress (2010)	Nurse provided family support	Qualitative, descriptive	5 nurses, 5 patients, 5 family members from an adult ICU in the United States, Phenomenology	All participants discussed importance of psychosocial support. Nurses described growing as a person and increased passion to learn, patients were thankful to be alive and had a new outlook on life and family members found new strength in their faith
Cypress (2011)	Nurse provided family support, FCC	Qualitative, descriptive	5 nurses, 5 patients, 5 family members from an adult ICU in the United States, Phenomenology	Nurses theme was advocacy, patient theme was uncertainty, and family theme was confidence in nurse and health care team
Cypress (2015)	Nurse provided family support, FCC	Qualitative, descriptive	5 nurses, 5 patients, 5 family members from an adult ICU in the United States, Phenomenology	Described concept of transformation: the importance of nurse-family relationship and idea that this relationship can benefit the nurse, family and patient in different ways
da Silva et al. (2015)	Burnout	Cross-sectional, descriptive, survey	130 ICU nurses and nursing assistants from 2 hospitals in Brazil, Job Stress Scale and MBI, RR = not provided	Moderate emotional exhaustion $M = 24.5$, $SD = 9.3$, Moderate depersonalization $M = 9$, $SD = 3.4$, and low personal accomplishment 37.7% of sample had high levels of emotional exhaustion and depersonalization No association between burnout and sociodemographic and work-related variables
Dalmolin, Lunardi, Lunardi, Devos Barlem, and da Silveira (2014)	Burnout, ethical conflict, moral distress, organizational resources	Cross-sectional, descriptive, correlational, survey	375 nurses and nursing assistants from 3 hospitals in Brazil, Moral Distress Scale, MBI, RR = 75%	Positive relationship between moral distress and burnout ($r = .102$) Professional fulfillment negatively related to MD ($\beta = -.107$)

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Davidson (2009)	FCC, family well-being	Review of literature	45 studies, included dissertations, integrated review	Family members experience changes in life and role function Family responses include dissatisfaction, anxiety, depression and post-traumatic stress Family needs are often unmet Little evidence to guide practice for support strategies
Davidson et al. (2017)	FCC, nurse provided family support, organizational resources	Guidelines for FCC in neonatal, pediatric and adult ICUs	Scoping review of 238 studies, 23 recommendations for clinical practice	Recommendations provided for communication with family members, family presence, family support, consultations and ICU team members and organizational/practice environment factors Very limited evidence for family support, and family presence in ICU, and influence of practice environment on FCC and family outcomes
Davidson, Jones, and Bienvenu (2012)	Family well-being	Review of literature	Studies on Post-intensive care syndrome-Family (PICS-F)	Family members of patients at high risk of death, had a family member die in the ICU, had a family member become ill unexpectedly, and have additional stressors, have higher stress and increased risk of PICS-F Family assessment for PICS-F rarely done in clinical practice and impact of referral for family members on outcomes remains unknown
de Boer, van Rosmalen, Bakker, and van Dijk (2016)	Organizational resources, Ethical conflict, moral distress	Repeated measures, survey	Nurses, advanced practices nurses and physicians from a neonatal ICU in Netherlands, MDS-R, HECS, RR = 80%	Religion ($\beta = .155$) and the desire to decrease intensity of treatment ($\beta = .183$) significantly predicted moral distress Nurses rated ethical climate significantly lower than physicians at every measurement point The ethical climate did not have a moderating effect on the relationship between perceived inappropriate care and moral distress intensity

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
De Jong and Beatty (2000)	Nurse provided family support, FCC	Cross-sectional, descriptive, survey	84 family members of adult patients from 3 ICUs in military hospital in United States, revised version of Nurse Parent Support Tool, RR = not reported	<p>Importance of information was rated highest ($M = 4.74$, $SD = .36$), followed by appraisal support ($M = 4.42$, $SD = .70$), emotional support ($M = 4.41$, $SD = .72$), and instrumental support ($M = 3.81$, $SD = 1.18$)</p> <p>Nurses provided support interventions to spouses more often than adult children</p> <p>Family visitation was most frequently provided intervention</p>
de Veer, Francke, Struijs, and Willems (2013)	Organizational resources, Ethical conflict, moral distress	Cross-sectional, descriptive, correlational, survey	365 Dutch nurses from acute care ($n = 120$), nursing homes, and home care in the Netherlands, researcher developed moral distress questionnaire, job satisfaction (MAS-GZ), RR = 62%	<p>Nurses less satisfied with their job had higher moral distress scores ($r = .34$)</p> <p>Intensity of moral distress was related to job related stress ($r = .44$) and quality of care ($r = -.31$)</p> <p>Higher job stress associated with lower perceived quality of care ($r = .55$)</p>
Dinç and Gastmans (2013)	Nurse provided family support	Review of literature 1980-2011	Explored concept of trust in nurse-patient/family relationships	<p>Factors that improve trust: family participation in care, honesty, commitment to care, sensitivity, awareness of unvoiced needs and patient suffering</p> <p>Factors that decrease trust: inadequate skill and knowledge, medical jargon, failure to anticipate needs, depersonalization of the patient, neglecting responsibilities and remaining distant</p> <p>Nurse work responsibilities hindered trust: workload, inadequate time and conflicts between families and nurses</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Dodek et al. (2016)	Ethical conflict	Cross-sectional, descriptive, correlational survey	Health professionals from 13 hospitals in Canada including 428 nurses, MDS, RR = 49%	Nurses had higher moral distress (<i>Mdn</i> = 83, IQR = 55-119) than physicians (<i>Mdn</i> = 57, IQR = 45-70) Nurse years of experience associated with moral distress (<i>B</i> = 10.8, 95% CI [2.6, 18.9])
Doucette and Pinelli (2004)	Family well-being	Longitudinal, correlational, survey	71 parent dyads from neonatal ICU in Canada at 18 to 24 months after birth of child, FILE (strains), FIRM (resources), F-COPES (problem solving and coping), FAD-GF family adjustment, RR = 59%	Family resources was significant predictor of family adjustment and explained 35.6% of adjustment in fathers and 50.4% in mothers Family resources was related to adjustment at 18 and 24 months for mothers for the subscale of mastery and health (<i>t</i> = 2.53, <i>p</i> = .01) and esteem and communication (<i>t</i> = 2.67, <i>p</i> = .01) Resources for fathers were also related to adjustment for mastery and health (<i>t</i> = 2.16, <i>p</i> = .03) Adjustment significantly lower for infants with ongoing health issues for fathers (<i>t</i> = 2.05, <i>p</i> = .05)
Dyo, Kalowes, and Devries (2016)	Ethical conflict, moral distress, organizational resources	Cross-sectional, descriptive, correlational, survey	426 nurses from 5 hospital system in United States, MDS, RR = 43%	After adjusting for age, gender, ethnicity and specialty area, moral distress had positive relationship with intention to leave, doubling the change (OR = 2.08, 95% CI [1.28, 3.40], <i>p</i> = .003) Hospital system issues were focus of moral distress situations as described by nurses
Edwards, Thronson, and Dyck (2012)	Ethical conflict, moral distress, organizational resources	Qualitative, descriptive	12 ICU nurses from medical and surgical ICUs in Canada, Content analysis	Most conflict related to end-of-life decisions, and differences between family and medical team Nurses described 'backing away' from the family when conflict existed Nurses did not feel supported, negatively influenced morale in the unit. Nursing colleagues were most supportive

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Edwards, Thronson, and Girardin (2012)	Ethical conflict, moral distress, organizational resources	Cross-sectional, descriptive, survey	241 ICU nurses from Canadian Association of Critical Care Nurses, researcher created tool for ethical conflict, RR = 22%	<p>51% reported being involved in at least one conflict within last week worked, and 26.1% more than one conflict, most common conflict was disputes with family (46.5%) followed by disputes within the health care team (35.3%) and disputes among family members (12.4%)</p> <p>Nurses described being ‘isolated, dismissed, caught in the middle, torn between patient and family or between team and family’</p>
Eggenberger and Nelms (2007)	Nurse provided family support, family well-being	Qualitative, descriptive	11 families (41 family members) from medial ICU in United States, Hermeneutic analysis	<p>Families described ‘lived space’ – the physical environment of the ICU, ‘lived relation’ – interactions with patient, family and health care team, ‘lived body’ – negative emotions and physical strain, and ‘lived time’ – waiting and uncertainty.</p> <p>Families felt connection and positivity when the nurse supported the family by sharing information, treating the patient and family as people, spending time with the family, encouraging family involvement and expression of empathy</p> <p>In 10/11 interviews families described times were nurses were not supportive of the family and their experience of distress/frustration when this occurred</p>
Eggenberger and Sanders (2016)	Nurse provided family support	Pre-post mixed design, interventional, pilot	30 nurses from an ICU and random sample of 35 family members in United States, Family Nurse Practice Scale, Iceland Family Perceived Support	<p>Family data indicated need for more support-this guided the development of nurse intervention</p> <p>Intervention was 4-hour workshop focusing in therapeutic conversations with families (role playing, exemplars)</p> <p>Pre-data – 29% reported high confidence working with families</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			Questionnaire, Family RR = 50%	No significant change in knowledge post intervention 92% satisfied with education, and commented they perceived greater importance of their role in family care after intervention
El-Masri and Fox-Wasylyshyn (2007)	Nurse provided family support, FCC	Cross-sectional, descriptive, correlational, survey	47 ICU nurses, researcher developed tool to examine nurse role with family members, RR = 54%	Nurses rated own performance with families higher than colleagues Nurse comfort with family focused interventions positively correlated with enactment of interventions: -discussing patient prognosis (r = .43) -discussing probability of death (r = .43) -explaining equipment (r = .43)
Ellis, Gergen, Wohlgemuth, and Nolan (2016)	Nurse provided family support, family well-being	Qualitative, descriptive	13 interviews and 4 focus groups with nurses from 3 surgical ICUs in United States, Grounded theory	Nurses perceived family expectations to be unrealistic due to overly optimistic communication from surgeons Nurses facilitated family resilience by supporting family participation in patient care- allowing them to be with patient, be involved in rounds, nurse provided emotional support and family members carrying out small tasks in patient care Family involvement had to be balanced with promotion of well-being for the entire family Nurse communication promoted family resilience Disagreements among members of the health care team, and families created stress for nurses, patients and family members

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				Most nurses described positive interactions with families and that family care was important part of role
Embriaco, Papazian, Kentish-Barnes, Pochard, and Azoulay (2007)	Burnout, organizational resources	Review of literature	Narrative review	Hallmark = emotional exhaustion Workplace climate and workload are determinants of burnout Common in the ICU due to work related stress and higher prevalence than other specialties Associated with decreased well-being of health care professionals, decreased quality of care and costs due to absenteeism and turnover
A. Engström and Söderberg (2004)	Family well-being, nurse provided family support	Qualitative, descriptive	7 partners (1 man and 6 women) of ICU patients cared for in Sweden, Thematic content analysis	Themes: 'being present'-providing information to health care professionals and protecting partner, 'putting oneself in second place'-concerns for other members of the family, appreciated support of staff, and 'living in uncertainty' – feeling shocked, vulnerable, and full of sorrow At times family felt staff provided information that was too discouraging and did not believe they as family members understood the situation
A. Engström and Söderberg (2007)	Nurse provided family support, ethical conflict	Qualitative, descriptive	Focus groups with 24 ICU nurses in Sweden, Thematic content analysis	Nurses described situations in which they were blamed by families for not providing enough information and that family could be aggressive towards nursing staff Family was understood as an important, yet demanding part of nursing work Nurses described a need to discuss goals of care and resolve ethical concerns to improve family care

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				The physical environment was a barrier due to lack of privacy for discussion with family members
B. Engström, Uusitalo, and Engström (2011)	Nurse provided family support, FCC, family well-being	Qualitative, descriptive	8 ICU nurses from Sweden, content analysis	<p>Primary reason for limiting family involvement was to protect patient privacy during physical cares, and to speak directly with the patient without presence of family members</p> <p>Nurses described conflicts with family members, problems with the work environment and lack of time for family care-Equipment made it difficult to involve family</p>
Epp (2012)	Burnout, organizational resources, moral distress	Review of literature	Narrative review	<p>No standard definition of burnout, emotional exhaustion is influenced by work environment, moral distress may contribute to burnout</p> <p>Feeling ineffective influenced by depersonalization, unable to make a difference</p>
Espinosa, Young, and Walsh (2008)	Ethical conflict, organizational resources, nurse provided family support	Review of literature	Integrated review	<p>Need for extremely high levels of compassion to care for families – emotionally distance self when unable to resolve conflicts</p> <p>Barriers to high quality ICU end-of-life care include lack of nursing involvement, provider disagreements, inadequate pain relief for patient, unrealistic family expectations, moral distress and dissociative coping mechanisms, inadequate experience and training, poor staffing and the environment of care</p>
Falcó-Pegueroles et al. (2016)	Ethical conflict, moral distress, organizational resources	Cross-sectional, descriptive, correlational, survey	203 ICU nurses from 2 hospitals including 10 ICUs in Spain, ECNQ-CCV,	Exposure to ethical conflict was moderate ($M = 182.35$, $SD = 71.3$)

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			questions about work environment, RR = 69%	<p>Highest exposure to ethical conflict item was “Realization analgesia is ineffective” ($M = 14.43$, $SD = 6.89$)</p> <p>Less exposure to ethical conflict when nurses perceived working in an environment that would address the problem and higher levels of ethical conflict in poor practice environments ($F = 7.710$, $p = .001$)</p> <p>Nurses involved in decision-making had lower exposure to ethical conflict than those who did not ($F = 5.012$, $p = .008$)</p>
Falcó-Pegueroles, Lluch-Canut, Roldan-Merino, Gobern-Tricas, and Guàrdia-Olmos (2015)	Ethical conflict, moral distress, organizational resources	Cross-sectional, descriptive, survey	203 ICU nurses from 2 hospitals including 10 ICUs in Spain, ECNQ-CCV, RR = 69%	<p>Moral outrage most frequently selected type of conflict in 10/19 scenarios, followed by moral distress</p> <p>Types of ethical conflict had an organizing structure, with moral distress and moral outrage associated with highest exposure to ethical conflict</p>
Fassier and Azoulay (2010)	Ethical conflict, organizational resources	Review of literature	Integrated review	<p>Conflicts are frequent in ICU</p> <p>No standard definition of conflict</p> <p>Physicians less likely to report conflict than nurses</p> <p>End-of-life common source of conflict</p> <p>Family wishes for aggressive care at end-of-life most common source of conflict between family and ICU team</p> <p>Consequences of conflict: delayed treatment decisions, problems in care transitions, nonbeneficial aggressive treatment, poor FCC, mistrust, dissatisfaction, increased family burden, higher rates of family anxiety, depression and complicated grief</p> <p>Financial cost to health care systems: litigation, turnover and costs associated with adverse outcomes</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Fernandes and Moreira (2013)	Organizational resources, ethical conflict	Qualitative, descriptive	15 ICU nurses from Portugal, Thematic analysis	Ethical issues included – the right to health care versus the right to die, problems in communication with family, challenges related to teamwork, and a health care system with limited resources
Flannery, Ramjan, and Peters (2015)	Burnout, organizational resources, ethical conflict	Review of literature	12 articles	<p>Communication problems during end-of-life decisions greatest theme in challenges</p> <p>Under-involvement of nurses is common and consequence for nurses include anxiety, anger, frustration and potentially burnout</p>
Ganz et al. (2013)	Organizational resources, ethical conflict, moral distress	Cross-sectional, descriptive, correlational, survey	291 ICU nurses from 6 hospitals in Israel, Conditions of Work Effectiveness Questionnaire II, MDS, RR = not reported	<p>Those working in general and respiratory ICUs had higher moral distress frequency and intensity</p> <p>Moral distress negatively related to structural empowerment (opportunities, information, support, resources, formal power, informal power and global empowerment) ($r = -.18$)</p> <p>19% of variance in moral distress explained by type of ICU and the access to resources component of structural empowerment</p>
Ganz and Yoffe (2012)	FCC, nurse provided family support	Cross-sectional, descriptive, correlational, survey	93 nurses in ICU at 2 hospitals in Israel, Nursing Activities for Communication with Families-Revised, Barriers to Providing FCC-Revised, Nurses Experiences of Family-Witnessed	<p>28% performed FCC at high level</p> <p>Barriers to FCC: inadequate staffing (87%), difficulty with a family (72%), unrealistic family expectations (59%)</p> <p>Significant correlation between barriers to FCC and attitudes ($r = -.36, p = .0001$)</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			Resuscitation and Attitudes to Family Presence during resuscitation, RR = 83%	
Glasberg, Eriksson, and Norberg (2007)	Burnout, ethical conflict, moral distress	Cross-sectional, descriptive, correlational, survey	423 health care personnel (211 nurses) in Sweden, MBI, Stress of Conscience Questionnaire (SCQ), Perceptions of Conscience Questionnaire (PCQ), Social Interactions Scale, RR = 75%	<p>Higher levels of emotional exhaustion when there was little support from superiors, coworkers, friends or relatives</p> <p>Emotional exhaustion ($r = .67$) and depersonalization ($r = .38$) related to stress of conscience</p> <p>48.1% of the variance in emotional exhaustion was explained by the SCQ and PCQ</p> <p>22.2% of the variance was explained by the SCQ and PCQ</p>
Goldman and Tabak (2010)	Organizational resources	Cross-sectional, descriptive, correlational, survey	95 nurses from 6 internal medicine units in Israel, Ethical Climate Questionnaire, Managerial Job Satisfaction Questionnaire, RR = not provided	<p>Ethical climate dimensions explained 32.1% of the variance in job satisfaction</p> <p>Caring ($\beta = -.32$) and Independent ($\beta = -.20$) dimensions significantly influenced job satisfaction</p>
Guntupalli, Wachtel, Mallampalli, and Surani (2014)	Burnout	Cross-sectional, descriptive, correlational, survey	151 ICU nurses and 62 respiratory therapists from a hospital in the United States, MBI-HHS, RR = not provided	<p>Scores were moderate to high for emotional exhaustion in 54% of the sample, and in 40% of the sample for depersonalization</p> <p>Low personal accomplishment scores were found in 40.6% of the sample</p> <p>Nurses had higher burnout than respiratory therapists (OR = 2.74, $p = .03$, 95%CI [1.085, 6.937])</p> <p>Night nurses had less burnout when compared to day nurses (OR = .50, $p = .04$, 95%CI [.256, .976])</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Gutierrez (2012)	FCC, nurse provided family support	Qualitative, descriptive	20 family members from a ICU in the United States, Content analysis	<p>Family members described nurses as an accessible resource; however, they also shared that nurses were busy and could not make time to sit down and talk to them</p> <p>Family members wanted honest, respectful, compassionate and caring communication, and have consistency in who delivers messages-none of the family members in the study received consistency</p>
Gutierrez (2013)	Ethical conflict, FCC	Qualitative, descriptive	7 attending physicians, 3 fellows, 20 family members receiving negative prognostic information, and observations in a Medical-Surgical ICU in the United States, Ethnographic inquiry	<p>Nurses and physicians communicated with each other about their interpretation of poor patient responses to treatment but encountered conflict when the nurse thought the information should be shared with family and the physician did not</p> <p>Family members needed time to prepare for negative prognostic information-they were ready for it before it was provided and lack of preparation for bad news led to distress</p>
Hakio, Rantanen, Åstedt-Kurki, and Suominen (2015)	Family well-being, nurse provided family support	Cross-sectional, descriptive, correlational, survey	35 family members from a pediatric ICU in Finland, FAFHES, RR = 35%	<p>Family strengths rated lowest ($M = 1.86$, $SD = .61$)</p> <p>Family well-being $M = 4.25$, $SD = .79$ (1-6 scale)</p> <p>Nurse provided support score means ranged from 4.01 – 4.68 for 3 subscales (affirmation, concrete aid, affect)</p> <p>For nurse provided family support, family members with greater education perceived more support (affirmation) from nurses than those with less education</p> <p>Nurse provided support weakly correlated with family health ($r = .33$)</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Hamric and Blackhall (2007)	Organizational resources, ethical conflict, moral distress	Cross-sectional, descriptive, pilot	106 ICU nurses and 29 physicians from 1 hospital and 87 nurses from another hospital in the United States, Ethical Environment Questionnaire, HECS, MDS, Collaboration instrument, RR = 50.4%	<p>Collaboration correlated with the ethical environment for nurses ($r = .51$) and satisfaction with quality of care ($r = .64$)</p> <p>Moral distress negatively correlated with ethical environment ($r = -.47$)</p> <p>Nurses had higher moral distress, lower ratings of ethical environment and collaboration than physicians</p>
Hansen, Rosenkranz, Mularski, and Leo (2016)	FCC	Cross-sectional, descriptive, survey	138 family members from cardiac/medical or general ICUs in United States, Family Satisfaction ICU survey and open-ended questions, RR = not provided, 106/138 enrolled completed open-ended comments (77%)	<p>Family members greatest concerns related to communication, competent care and the ICU environment</p> <p>Comments most frequently about the emotional and inter-relational aspects of care</p> <p>Some family members perceived better care when health care professionals attended to emotional elements of care</p> <p>When family member perceived empathy they had greater confidence in care</p> <p>Some family members perceived a lack of compassion from nurses</p>
Hart (2005)	Organizational resources, ethical conflict	Cross-sectional, descriptive, correlational, survey	463 nurses from United States from random sample, HECS, Anticipated Turnover Scale, Nurse Retention Index RR = 34%	<p>Ethics education from employer ($r = .153$) and ethical conflict in previous position ($r = -.108$) were significantly related to positional and professional turnover</p> <p>Hospital ethical climate (HEC) ($\beta = .385$) was strongest predictor of nurses' turnover intentions and explained 25.4% of the variance in positional turnover intentions and 14.7% of the variance in professional turnover</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				intentions, and also was the strongest predictor ($\beta = .236$)
Hayes, Merrill, Clukey, and Curtis (2010)	FCC, nurse provided support	Cross-sectional, descriptive, survey	100 family members of trauma patients, modified version of Caring Behaviors Inventory for Elders, RR = not provided	Item mean scores 2.5-2.93/3 (high level of caring behaviors) Lowest rated items: calling you by preferred name, assisting with religious or spiritual needs, knowing your likes, dislikes and routines, and meeting your needs whether or not you ask
Henrich et al. (2016)	Moral distress, ethical conflict, organizational resources	Qualitative, descriptive	10 focus groups and 4 interviews with nurses and other health care professionals in Canada	Themes related to moral distress included: the quality of care, amount of care provided, inconsistent plans of care, poor communication, conflict with families, recommendations for care ignored, and lack of support and resources
Himuro, Miyagishia, Kozuka, Tsutsumi, and Mori (2015)	FCC	Psychometric testing	83 Neonatal staff members at 3 large hospitals in Japan, new tool to measure health care professionals' perceptions of FCC, RR = 72%	Nurses had high scores for "answer parents' perspective completely" and more aware of psychosocial responses of parents than providers Providers gave high scores for "communicating specific information"
Hinkle and Fitzpatrick (2011)	Nurse provided family support, FCC	Cross-sectional, descriptive, correlational, survey	101 patients, 101 family members, 28 physicians, 109 nurses from 6 units at hospital in United States, Critical Care Family Needs Inventory, RR = 91%	Significant differences in mean scores for family members, physicians and nurses for information ($F=5.90, p = .0005$), support ($F = 4.12, p = .022$) and comfort ($F = 5.01, p = .01$) Nurses wrote that a social worker, CNS or nurse coordinator should speak with families daily
Hinno, Partanen, Vehviläinen-Julkunen, and Aaviksoo (2009)	Organizational resources	Cross-sectional, descriptive, correlational, survey	478 acute care nurses from Estonia, Nursing Work Index-Revised, RR = 57%	Control over practice ($M = 2.56, SD = .59$) and organizational support ($M = 2.66, SD = .55$) rated lowest

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				Organizational support highly correlated with all other subscales on Work Index (autonomy, control over practice, nurse-physician collaboration)
Holden, Harrison, and Johnson (2002)	Nurse provided family support, FCC	Review of literature from 1982 to 2002	12 studies, narrative review	<p>Nurses often see speaking to family members as a lower order priority</p> <p>Nurses may use their power to restrict family at a vulnerable time, especially if the family is perceived to be 'getting in the way'</p> <p>Nurses have a broad range of skills related to family care</p> <p>Families in best position to meet family needs but yet family meets not consistently met</p>
Humphries and Woods (2016)	Organizational resources and ethical conflict	Qualitative, descriptive	28 nurses working in hospitals in New Zealand, 2 focus groups, thematic analysis	<p>Themes included: 'being burdened' (heavy workload, poor staffing), 'push the bed' (pressure to move patients through the system), and 'us and them' (relationships between nurses and others in the health care system)</p> <p>Nurses shared that 'being silenced' is detrimental to their moral agency, and precursor to moral distress</p>
Hupcey (1998)	Nurse provided family support, FCC	Qualitative, descriptive	10 family members and 10 ICU nurses from hospital in United States, Grounded theory	<p>Nurses and family members tried to support positive relationships</p> <p>Certain nursing behaviors inhibited relationships with family members: depersonalizing the patient and family by not referring to the patient by name, labeling the patient or family as difficult, providing care without encouraging family participation, not making eye contact</p> <p>Certain family behaviors that inhibited the nurse-family relationship: bringing the nurse into family feuds, expressing a lack of concern for the patient, displaying a lack of trust in the nurse</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Hupcey (1999)	Nurse provided family support, FCC	Qualitative, descriptive	11 family members, 10 nurses and 30 ICU patients from hospital in the United States, Grounded theory	Nurses, family members and patients all agreed family plays an important role Families described their role as to protect and look out for the patient Nurses needed to maintain control of their own nursing tasks and care of the patient Nurses 'put families in their place' when not approving of family and patient interaction Inconsistencies among nurses allowing family to visit Families felt they were 'on guard' trying to help the patient and the nurse
Hupcey and Penrod (2000)	Family well-being	Qualitative, descriptive	12 spouses of ICU patients from a hospital in the United States, Grounded theory	Themes: 'going it alone' – felt alone due to great sense of responsibility, new responsibilities and 'health related decision-making'-making decisions about life-sustaining treatments very stressful for family members
Jox et al. (2010)	Ethical conflict, organizational resources	Cross-sectional, descriptive, correlational, survey	149 nurses and 48 physicians from hospital in Germany, researcher developed instrument on attitudes regarding life-sustaining treatments, RR = 56%	Nurses were least satisfied with decisions made (32%) Nurse satisfaction with communication low (16%) Negative relationship between nurse and senior physician views about decision making ($r = -.53$)
Karagozogu, Yildirim, Ozden, and Çınar (2017)	Moral distress, ethical conflict	Cross-sectional, descriptive, survey	200 nurses from medical and surgical ICUs from 3 hospitals in Turkey, MDS-R, RR = 87%	Highest scoring item: witness insufficient care quality due to poor team communication, incompetent professionals, unnecessary tests and prolonging death and nonbeneficial life-support No differences based on demographics

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Karanikola, Papathanassoglou, Mpouzika, and Lemonidou (2012)	Burnout, organizational resources	Cross-sectional, descriptive, survey	152 ICU nurses from ICUs in Greece, MBI, Index of work satisfaction, RR = 60%	Moderate emotional exhaustion ($M = 23.8$, $SD = 10.2$) and depersonalization ($M = 9.3$, $SD = 6.2$) Negative relationship between professional satisfaction and emotional exhaustion ($r = -.352$) and depersonalization ($r = -.246$) Positive relationship between personal accomplishment and professional satisfaction ($r = .275$)
Karlsson, Forsberg, and Bergbom (2010)	Nurse provided family support, Family well-being	Qualitative, descriptive	10 interviews with family members during and after the ICU experience in Sweden, Thematic analysis	Family members felt dependent on nurses, wanted more support from nurses to communicate with the patient and wished nurses were more present to provide a sense of security There was disappointment when nurses were not genuine
Kean and Mitchell (2014)	FCC, Nurse provided family support	Descriptive	Analysis of 2 studies: Study 1: Qualitative, descriptive exploration of nurse experiences with families with 20 ICU nurses in the United Kingdom, study 2: quasi-experimental study about family involvement in care- survey of these nurses ($n = 52$, RR = 26%)	Nurses were challenged by open visiting policies and this influenced nursing time and space for work Caring for families sometimes delayed patient care, and nurses were concerned about patient privacy In study 2, 88% of the nurses changed their perception about the value of involving family members and 98% thought that family involvement should be usual care
Klopper, Coetzee, Pretorius, and Bester (2012)	Burnout, organizational resources	Cross-sectional, descriptive, survey	935 ICU nurses from 62 hospitals in South Africa, the RN4CAST (measure of practice environment) and MBI, RR = not provided	High degree of burnout: Emotional exhaustion $M = 27.04$, $SD = 13.61$, Depersonalization $M = 11.13$, $SD = 9.25$ Correlations between all dimensions of practice environment, emotional exhaustion, depersonalization and personal accomplishment and job satisfaction

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Lederer, Kinzl, Traweger, Dosch, and Sumann (2008)	Burnout, organizational resources	Cross-sectional, descriptive, correlational, survey	150 nurses and 33 physicians working in ICUs in Austria, MBI-D, RR = 59%	34% had risk of burnout, 6% had fully developed burnout No differences based on demographics or type of ICU Support for burnout was only offered in 2 of the ICUs
Leske (2000)	Family well-being	Cross-sectional, multivariate, comparison	83 family members of patients with gunshot wounds or motor vehicle accident in a surgical ICU in the United states, FIRM (family resources), FHI (hardiness), F-COPES (coping), FWBI, FAS (adaption), RR = not provided	Family members of patients with gunshot wounds had significantly more stress ($F = 4.57, p = .04$), and fewer coping strategies ($F = 8.12, p = .006$) and resources ($F = 6.75, p = .01$) than those in motor vehicle accidents No differences based on severity of illness
Leske (2003)	Family well-being	Cross-sectional, multivariate, comparison	127 family members of 51 patients (CABG, gunshot wound, motor vehicle accident) in a surgical ICU in the United States, FILE (stressors), FHI (hardiness), F-COPES (coping), FWBI, FAS (family adaptation), RR = not provided	No differences for families of patients with gunshot wounds, CABG, or motor vehicle accidents for hardiness, well-being or adaptation Family members of gunshot wound patients had significantly more stress ($F = 7.94, p < .01$) and fewer coping strategies ($F = 4.33, p < .01$)
Leske and Brasel (2010)	Family well-being	Prospective, multivariate, comparison	33 family members of patients with a gunshot wound ($n = 14$) or motor vehicle accident ($n = 19$) who witnessed ($n = 16$) or did not witness ($n = 17$) resuscitation of family	No differences in any of the measures for those who witnessed resuscitation versus those who did not prior to hospitalization

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Leske and Jiricka (1998)	Family well-being	Cross-sectional, descriptive, correlational, survey	52 family members of 21 patients (gunshot wound or motor vehicle accidents) in a surgical ICU from a hospital in the United States, FIRM (resources), FWBI, FILE (stressors), FCOPEs (coping), FHI (hardiness), FPSCI (problem solving communication), RR = not provided	Increases in family resources related to increase in well-being ($r = .41$), family adaptation ($r = .58$), coping ($r = .58$), and problem-solving communication ($r = .57$) Family stressors, strains and transitions accounted for 40% of the variance in family well-being ($F = 26.53, p < .001$) and 16% of the variance in family adaptation ($F = 7.18, p < .01$) Only problem-solving communication contributed significantly to family adaptation ($t = 3.57, p < .001$)
Leske, McAndrew, Brasel, and Feetham (2017)	Family well-being and FCC	Prospective, multivariate, comparison	70 family members of patients who survived trauma and witnessed resuscitation and 70 family members who did not witness resuscitation from a surgical ICU in the United States, FIRM (resources), F-COPEs (coping), FPSCI (problem solving communication), S-Anxiety, ASD, FWBI, FSICU (family satisfaction), RR = 100% for intervention and 83% control	Family members who witnessed resuscitation had significantly less anxiety ($t = -2.43, p = .04$), and stress ($t = -2.86, p = .005$) and greater well-being ($t = 3.46, p = .001$) Family resources moderated stress in those in the witnessed resuscitation group ($t = 2.59, p = .01$)

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Levin, Fisher, Cato, Zurca, and October (2015)	FCC	Cross-sectional, descriptive, mixed methods	96 family members, 64 nurses, and 271 physicians in a pediatric ICU in the United States, observation of FCC rounds and researcher developed tools about FCC, RR = 87% (family), 82% (physicians), 58% (nurses)	74% of the families reported hearing about FCC rounds and 97% found the rounds helpful 48% participated to be informed, 22% to participate in the care of their child and 9% thought it was their parental role Family members wanted health professionals to look at them more than computer screens and did not understand the workflow of the ICU 66% of nurses reported families limited discussions during team rounds
Lind, Lorem, Nortvedt, and Hevrøy (2011)	FCC	Qualitative, descriptive	27 family members of 21 patients who died after withdrawing/withholding life support in ICUs in Norway, Grounded theory	Many family members did not feel included in decision making and frequently experienced a 'wait and see' approach to care Families thought vague communication from nurses was to protect them Waiting was also seen as a way to bridge the conversation about cessation of treatment
Lind, Lorem, Nortvedt, and Hevrøy (2012)	FCC, nurse provided family support	Qualitative, descriptive	27 family members of 21 patients who died after withdrawing/withholding life support in ICUs in Norway, Narrative analysis	Families thought the nurses practiced 'compassionate caring' – helping with instrumental needs and not making families feel they were in the way, but also 'vagueness in communication' – only reporting technical information and not helping families connect the whole picture Families wanted more active involvement with nurses
Loghmani, Borhani, and Abbaszadeh (2014)	FCC, nurse provided family support, organizational resources	Qualitative, descriptive	8 nurses and 10 family members from ICUs in Kerman, Content analysis	Factors that facilitated family care included: consideration of spirituality, emotional support, participation, notification and consultation Barriers included misunderstandings about treatment needs, nurses difficult providing holistic care due to job demands, nurses ignoring professional ethics as a result

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				of the work environment – nurses reported a lack of concern from nurse managers interfered with nurse-family communication
Losa Iglesias and Becerro de Bengoa Vallejo (2013)	Burnout, organizational resources	Cross-sectional, descriptive, correlational, survey	74 ICU nurses from 5 hospitals in Spain, Job Satisfaction Survey, Nursing Stress Scale, MBI, RR = 75%	High emotional exhaustion ($M = 26.74$, $SD = 10.79$) and moderate depersonalization ($M = 8.15$, $SD = 7.66$) and low personal accomplishment ($M = 8.28$, $SD = 7.6$) Negative correlation between depersonalization and job satisfaction ($r = -.291$) and job satisfaction and nursing stress ($r = -.372$) Positive correlation between nursing stress and depersonalization ($r = .246$)
Losa Iglesias, Becerro de Bengoa Vallejo, and Salvadores Fuentes (2010)	Burnout	Cross-sectional, descriptive, correlational, survey	80 ICU nurses from 5 hospitals in Spain, Acceptance and Action Questionnaire (experiential avoidance), MBI, RR = 81%	High emotional exhaustion ($M = 25.19$, $SD = 10.52$) moderate depersonalization ($M = 6.53$, $SD = 6.04$) and low personal accomplishment ($M = 8.95$, $SD = 7.89$) Positive correlation between experiential avoidance and depersonalization ($r = .525$) and emotional exhaustion ($r = .507$) Significant relationship with age and emotional exhaustion ($F = 6.02$, $p = .001$), with nurses in ICU 10 years or less with lower scores than those working 11 to 20 years or 20 years or more Years in the ICU and emotional exhaustion were significantly associated ($F = 7.18$, $p = .001$)
Lusignani, Gianni, Re, and Buffon (2016)	Moral distress, ethical conflict	Cross-sectional, correlational, descriptive, survey	283 medical and surgical ICU nurses working in Italy, MDS-R, RR = 51%	64% unaware of moral distress Life support not in the best interest of patient most common cause of moral distress 3 variables related to moral distress: working in a medical ICU (OR = 2, 95% CI [.170, 3.452]), low levels of experience working in the ICU (OR = .421, 95% CI [.197, .891]) and intention of leaving the job (OR 1.539, 95% CI [.949, 2.51])

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
MacDonald, Weeks, and McLinnis-Perry (2011)	FCC, family well-being, ethical conflict	Qualitative, descriptive	20 family members from an ICU in Canada who made end-of-life decisions 6 months to 3 years before participation in study, Grounded theory	Themes: knowing the family member's wishes, strength of family relationships, decision as a chain of events, conflicted feelings (denial, shock, and tension when decisions were made quickly) Families wanted health care professionals to view the patient in a more holistic way, providing complete information and not having opinions forced on them
Malloy et al. (2009)	Organizational resources, ethical conflict, moral distress	Qualitative, descriptive	Nurses from Canada ($n = 14$), Ireland ($n = 13$), and Korea ($n = 9$) from specialty practices including the ICU, Thematic analysis	Themes: 'Care versus treatment' – nurses had a different philosophy of care than other health professionals with a focus on quality of living and dying which created tension, 'Constrained obligation'- nurses had a lack of power and did not believe their opinion was considered, 'Silenced voice' – nurses perspectives were silenced by the health care system, physicians, patients and families, and frequently nurses silenced themselves, 'Professional respect' – general lack of respect for the nursing discipline and disregard by physicians for their opinions so nurses had to work very hard to make their perspective known
Maslach, Schaufeli, and Leiter (2001)	Burnout, organizational resources	Review of literature	State of the science on burnout	Although there are 3 dimensions of burnout, exhaustion is important quality-exhaustion is the trigger for other symptoms Organizational characteristic are important factors but not well-studied Women score higher on emotional exhaustion Those with higher levels of education have higher burnout, and those between 30 to 40 years of age
McAdam, Dracup, White, Fontaine, and Puntillo (2010)	Family well-being	Cross-sectional, descriptive, correlational, survey	74 family members of patients at high risk for dying from 3 ICUs (medical/surgical, cardiovascular and	There were moderate traumatic stress levels, and anxiety and depression levels moderate to high Coping was moderate to high, with good family functioning per researcher defined cut offs

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			neurovascular) in the United States, Hospital Anxiety and Depression Scale, Edmonton Symptom Assessment Scale, F-COPES (coping), Family adaptability and cohesion Evaluation Scale (family functioning), RR 78%	More than 90% of the family members reported symptoms of being anxious, sad, scared, a poor appetite and well-being, and 80% reported these were at a severe level Family education was not associated with anxiety, depression, or stress scores There were higher traumatic stress scores when patient and family ages were younger
McConnell and Moroney (2015)	FCC, nurse provided family support, organizational resources	Descriptive, mixed method	70 ICU nurses for survey and 6 ICU nurses for interviews in Australia, survey based on other questionnaires about family involvement in care, RR = not reported	Barriers to involving families included: factors related to the patient, the family members, the nurse and the ICU environment The physical condition of the patient and ICU technology made it difficult to involve family members Nurses believed some family members should not be involved due to stress or other behaviors Nurses with negative family experiences less likely to involve them in the future, and some viewed family as interrupting their work The ICU environment-fast pace, busy
McKiernan and McCarthy (2010)	Nurse provided family support, FCC	Qualitative, descriptive	6 family members from a medical/surgical ICU in Ireland, Phenomenology	Themes: 'The need to know' – honest and understandable information, 'Being there with them' – being close to the patient and the challenge of other responsibilities, 'Making sense of it all' – ongoing process but families felt acceptance of outcomes easier when they believed the best care was given and 'Caring and support' – Nurses were a form of support for families-this was a caring attitude, talking with family members and constant updates, and assurance best care was given
McLain and Dashiff (2008)	Family well-being	Cross-sectional, descriptive,	58 patients who underwent CABG 65 years or older,	Positive relationship between family adaptation and patient psychological well-being ($r = .32$)

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
		correlational, survey	FILE (stressors), FACES II (family cohesion), Mental Health Index-5, RR = not provided	
Meert, Clark, and Eggly (2013)	FCC	Review paper	Narrative review related to operationalization of ICU pediatric FCC	Both adult and pediatric setting should implement strategies aimed at the delivery of FCC Ways to facilitate include: family-centered rounds, family presence during CPR and other procedures, family conferences using family-centered communication strategies
Meltzer and Huckabay (2004)	Burnout, ethical conflict, moral distress	Cross-sectional, descriptive, correlational, survey	60 ICU nurses working in coronary and neurological ICUs in 2 hospitals in the United States, MDS, MBI, RR = Not reported	Positive correlation between moral distress (futile care situations) and emotional exhaustion ($r = .317$) Scores on moral distress frequency were associated with scores for emotional exhaustion ($F = 6.47, p .01$) Moral distress explained 10% of the variance in emotional exhaustion
Merlani et al. (2011)	Burnout, organizational resources	Cross-sectional, descriptive, correlational, survey	3,052 Health care professionals (nurses, nursing assistants and physicians) from 74 ICUs in Switzerland, MBI, RR = 71%	29% of sample with high degree of burnout 33% moderate 39% low High burnout in 28% of nurse sample Factors that increased risk of burnout in multivariate analyses: patient mortality (OR = 1.06, 95% CI [1.003-1.12]) and 'feeling stressed' (OR = 3.72, 95% CI [3.12-4.43])
Meth, Lawless, and Hawryluck (2009)	Ethical conflict, burnout, organizational resources	Qualitative descriptive	42 participants (bioethicists, intensivists, nurses, social workers and hospital administrators) from 16 hospitals in Canada, Case study methodology	Conflict identified in 96% of interviews Conflict between team and family related to: insistence on treatments considered inappropriate, legal concerns, inconsistent goals of treatment, unknown patient wishes, and unrealistic expectations Consequences of conflict: refusal of potentially beneficial treatments, demands for inappropriate

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				treatment, inadequate family communication, legal means to resolve conflict, lack of patient or family understanding and staff burnout
Mitchell, Burmeister, Chaboyer, and Shields (2012)	FCC	Psychometric testing	165 family members from 2 ICUs in Australia, FCC-Adult version, RR = 96%, Exploratory factor analysis	3 subscales: respect, collaboration and support Overall Cronbach's alpha = .83 For 3 factors: Factor 1: .68 Factor 2: .76 Factor 3: .35 Respect, collaboration and support items mixed within each factor
Mitchell, Chaboyer, Burmeister, and Foster (2009)	FCC Nurse provided family support	Pragmatic trial with nonequivalent control group, pretest, posttest design	174 family members (75 control, 99 intervention) from 2 ICUs in Australia, FCC-Adult version, RR = not provided	FCC-Adult version (pediatric tool modified for study) reliable $\alpha = .62$ (respect), $.70$ (collaboration) and $.80$ (support) Families in intervention group reported more respect (OR = 1.93, 95% CI [1.37, 2.71]), collaboration (OR = 1.63, 95% CI [1.28, 2.07]), and support (OR = 1.79, 95% CI [1.27, 2.51]) and overall FCC (OR = 1.66, 95% CI [1.40, 1.97]) Spouses reported greater FCC (OR = 1.33, 95% CI [1.11, 1.58])
Mitchell et al. (2016)	FCC	Review of literature	Integrated review of 42 studies about FCC interventions	Only 33% of studies with theoretical framework Main themes: 'Interacting' with families ($n = 26$)-involved communication, education and information, 'Culture and connection' ($n = 13$) –presence, action, support or partnering with families, and 'Service delivery' ($n = 5$) – ICU design or position to support families
Mobley, Rady, Verheijde, Patel, and Larson (2007)	Ethical conflict, moral distress	Cross-sectional, descriptive, survey	44 ICU nurses from an ICU in the United States, MDS, RR = 44%	Futile care items highest for frequency of moral distress Items related to futile care for moral distress frequency were associated with age greater than 33 ($p = .03$), more

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Moghaddasian, Dizaji, and Mahmoudi (2013)	FCC, nurse provided family support	Cross-sectional, descriptive, survey	418 family members from ICUs in 4 hospitals in Iran, Critical Care Family Needs Inventory, Barrett-Lennard Relationship Inventory Empathy Scale, RR = not reported	than 4 years of ICU nursing experience ($p = .04$), and being in nursing more than 7 years ($p = .01$) Positive relationship between needs of family members and empathy scores ($r = .60$)
Moss, Good, Gozal, Kleinpell, and Sessler (2016)	Burnout, ethical conflict, moral distress, organizational resources	Review of literature with policy recommendations	Narrative review	25-33% of ICU nurses have serve burnout and as much as 86% of at least one of the three components Risk factors: 1) personal characteristics, 2) organizational factors, 3) quality of working relationships, 4) exposure to end-of-life issues Strategies for prevention include: improving work environment, building resiliency, self-care, work-life balance, promoting family conferences within 72 hours of admission
Mrayyan (2008)	Organizational resources	Cross-sectional, descriptive, comparative	264 nurses from 7 hospitals in Jordan, Nursing Practice Environment Scale, McCain's Behavioral Commitment Scale (intent to stay), RR = 88%	Significant difference between ICU nurses and floor nurses related to organizational climate ICU nurses agreed more strongly with administrative support Organizational climate related to nurses' intent to stay only for ICU nurses ($r = .202$)
Nadig, Huff, Cox, and Ford (2016)	Family well-being	Cross-sectional, descriptive, correlational, survey	56 family members patients on mechanical ventilation for 48 hours or more from ICUs at 2 hospitals in the United States, RR = 78%	No measures of clinical rapport or patient clinical status correlated with anxiety depression or post-traumatic stress Social support ($r = -.29$), intensity of coping ($r = -.32$), hope ($r = -.46$), optimism ($r = -.54$) correlated with psychological outcomes (anxiety and depression)

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				Resilience associated with lower adverse psychological outcomes (anxiety and depression) ($\beta = -4.82$, 95% CI [-8.53, -1.11])
Nelms and Eggenberger (2010)	Nurse provided family support, FCC	Qualitative, secondary data analysis	11 families (41 individual family members) in an ICU in the United States, Interpretive Phenomenology	Families experienced interrelated factors: the illness, hospitalization, family concern, vulnerability and suffering, family-nurse interactions, family needs for connection with nurses for understanding, information, time and participation in care Nurse-family interactions were the primary way families received information and access to their family member Nurses who acknowledged the family experience created a sense of connection for families All families shared negative interactions with nurses that were unsupportive and added to family distress Families felt they should not have had to work as hard as they did to establish relationships with nurses
Neville et al. (2015)	Ethical conflict, moral distress	Descriptive, correlational, survey, repeated measures	36 physicians and 288 nurses from 5 ICUs in the United States, researcher developed tool to examine perceptions of futile care-administered to nurses and physicians and responses based on patients they were caring for, RR = not reported	Nurse and physician reasons for futile care were similar (burdens outweigh benefits, patient will not survive outside an ICU, patient permanently unconscious, treatment will not achieve goal, imminent death); however, nurses used 'burdens outweigh benefits' more than physicians (nurse = 79%, physician = 58%, $p = .001$) Low agreement between nurses and physicians ($\kappa = .46$) Patients that were older ($M = .68$, 95% CI [.02, 1.32]) and had longer ICU stays ($M = .10$, 95% CI [.07, .14]) were more likely to be perceived as receiving futile care Only patients assessed as likely to be receiving care by both physicians and nurses were more likely to die in the hospital

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Olding et al. (2016)	FCC, nurse provided family support	Review of literature	Scoping review of family involvement in the ICU including 61 quantitative, 61 qualitative and 2 mixed method studies	No definition of patient and family involvement in the ICU Tensions related to thinking of patients and families as partners rather than recipients of care Lack of research related to interprofessional collaboration and patient and family involvement Inadequate research related to organizational and contextual factors that influence family involvement
Olsen, Dysvik, and Hansen (2009)	Nurse provided family support	Qualitative, descriptive	11 patients from an ICU in Norway, Content analysis	Patients described the importance of their families as an Important source of support providing 'help', 'comfort' and 'safety' Family made patients feel safer when unconscious, and when conscious family helped patient relax
Olson (1998)	Organizational resources, ethical conflict	Psychometric testing	360 nurses in 2 hospitals in United States, HECS, Confirmatory factor analysis, RR = 48%	Final model 26 variables with 5 factors: Nurse relationships with peers, with patients, with managers, the hospital and physicians $\alpha = .91$ overall, and .68 to .92 on subscales
Omari (2009)	Nurse provided family support, FCC	Cross-sectional, descriptive, survey	139 family members of 85 patients in 5 ICUs in Jordan, CCFNI, Needs Met Inventory, RR = not reported	Only 11% of the need items were perceived by families as met 25% of the need items were perceived as never met: 6 items related to support, 3 items related to information, 1 item related to comfort, and 1 item related to proximity
Özden, Karagözoğlu, and Yıldırım (2013)	Burnout, ethical conflict, moral distress, organizational resources	Cross-sectional, descriptive, correlational, survey	206 ICU nurses from 3 hospitals in Turkey, MBI, Futility Questionnaire (researcher developed), Minnesota Satisfaction Questionnaire (job satisfaction), RR = 66%	Frequency of futile treatment 30.4% Job satisfaction and depersonalization ($r = -.426$) and emotional exhaustion ($r = -.324$) negatively related Nurses who agreed to the statement that futility demoralized health care professionals had significantly lower job satisfaction ($F = 5.741, p = .004$) and higher scores for depersonalization ($F = 3.8, p = .025$)

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				Nurses who agreed decisions about futility should be made by all member of the team had lower depersonalization score ($F = 5.613, p = .005$) Nurses who did not agree they had mechanisms to prevent futile treatment had lower depersonalization scores ($F = 6.213, p = .003$)
Palda, Bowman, McLean, and Chapman (2005)	Ethical conflict, moral distress	Cross-sectional, descriptive, survey	141 nurses and 114 physicians from ICUs in Canada, researcher developed tool about provision of futile care, RR = 72%	Nurses (95%) and physicians (87%) had significant differences in perceived frequency of futile care in the last year worked Family request most common perceived cause by futile care followed by attending physician Themes in open-ended responses: physician cannot accept death because it is perceived as a failure and communication issues 61% believed the ICU should have an assigned ethicist or ethics committee
Paradis et al. (2014)	Ethical conflict, moral distress, organizational resources	Review of literature	Scoping review of ethnographic studies on interprofessional care in the ICU	4 themes: nurse-physician relationships, patient safety, end-of-life care, and learning, decision making and cognition ICU cultures that devalue nursing and hostile culture can limit nursing advocacy Medical training can threaten nursing quality of care Organizational and cultural factors limit advocacy for patients at end-of-life Conflict within patients' families and between health care professionals and families limit quality of care
Park et al. (2015)	Ethical conflict	Retrospective, descriptive, survey	ICU nurse reported ethical conflicts in two separate periods from Medical, Surgical, Neurological and neurosurgical ICUs in	140 ethical issues identified in a total of 5,378 admissions in period 1 ($n = 89$) and period 2 ($n = 51$) In both periods MICU had highest incidence of ethical issues ($n = 56$)

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			Korea, Researcher developed questionnaire to collect data on ethical issues, RR = not provided	Inappropriate health care professional behavior most frequent cause of ethical issues (period 1 = 70.1%, period 2 = 79.1%)
Pattison (2004)	Ethical conflict, moral distress, nurse provided family support	Review of literature	Narrative review	Effects of conflict included: Care fragmentation and suffering of patient care, feelings of exclusion, dissonance (personal and professional), confusion and distress for families due to conflicting opinions, delay in making decisions and poor communication
Paul and Rattray (2008)	Family well-being, nurse provided family support	Review of literature	Literature on short and long-term impact of critical illness on families from 1950 to 2007, narrative review	Majority of literature related to family needs and experiences Some literature related to coping, satisfaction, psychological effects, ICU discharge and follow up Literature related to family involvement just starting ICU experience can be positive-some report increase in personal growth, social support and psychosocial well-being
Pauly, Varcoe, Storch, and Newton (2009)	Organizational resources, moral distress	Cross-sectional, descriptive, correlational, survey	374 nurses from British Columbia, MDS, HECS, RR = 22%	Moderate moral distress intensity ($M = 3.88$) Low moral distress frequency ($M = 1.31$) Moderate HECS ($M = 3.48$) HECS negatively correlated with MD frequency and intensity ($r = -.420$) Only HECS subscale not associated with moral distress was peer support
Pavlish, Brown-Saltzman, So, Heers, and Iorillo (2015)	Ethical conflict, organizational resources	Descriptive, survey	108 nurse administrators and 45 clinical nurse specialists in the United states, open-ended questions about ethical conflicts, Critical Incident Technique	98% of the sample reported multiple ethical concerns (4.03 per situation) Majority were related to end-of-life and decisions to withhold or withdraw life-sustaining treatments including - health care team disagreements about plan of care, violation of patient preferences and patient suffering

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				<p>Next most common was conflicts between family and health care professionals or conflict among family members</p> <p>Risks for conflict were: 1) not knowing how to handle the situation, 2) fear of litigation or speaking up 3) delayed conversations about treatment options or prognosis 4) not knowing patient preferences and 5) burnout – emotional exhaustion from grief and disengagement</p> <p>System problems: culture of silence, inadequate resources, hierarchy</p>
Pavlish, Hellyer, Brown-Saltzman, Miers, and Squire (2015)	Ethical conflict, moral distress, organizational resources	Descriptive, feasibility	28 nurses (majority from ICU) at 2 hospitals in the United States, participants attended 4-hour ethics workshop and used a researcher developed tool to identify ethical issues in their practice	<p>Tool most often used with older patients with multiple comorbidities with life threatening illnesses</p> <p>Triggers were nurse identified patient suffering or deterioration</p> <p>Early indicators for conflict: signs of patient suffering, unrealistic expectations, and nurse moral distress</p>
Pereira, Teixeira, Carvalho, and Hernandez-Merrero (2016)	Burnout, ethical conflict	Cross-sectional, descriptive, correlational, survey	Nurses ($n = 300$) and physicians from 10 ICUs and 9 palliative care units ($n = 92$) in Portugal, Questionnaire on workload and conflicts, Questionnaire on ethical decisions and MBI-HHS, RR = 67% for ICU and 65% for palliative	<p>27% had high level of burnout with 62% with high levels of emotional exhaustion, 60% high levels of depersonalization and 38% had high levels of professional accomplishment</p> <p>31% of those in ICUs had high level of burnout versus 16% in palliative care</p> <p>Depersonalization was highest for those in the ICUs; however, professional accomplishment was also higher in the ICU (42% versus 27%)</p> <p>Burnout associated with experience death on day of survey completion (OR = 1.866), conflict with other professionals (OR = 7.51), withholding (OR = 2.108) or withdrawing (OR = 1.71) treatment</p> <p>When controlling for sociodemographic variables conflict remained significant, increasing burnout by</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				3.124 times and a degree in palliative care decreased burnout by .395 times
Piers et al. (2014)	Ethical conflict	Cross-sectional, descriptive, correlational, survey	Nurses ($n = 1,218$) and physicians ($n = 407$) from European ICUs, Inappropriate Care Questionnaire, RR = 93%	<p>Nurses reported families were insufficiently involved, while physicians reported a lack of participation by families</p> <p>Nurses more likely to report insufficient quality of care and inaccurate information given to family</p> <p>Reason for inappropriate care: mismatch between level of care and prognosis (disproportionate)</p> <p>Nurses reported more inappropriate care and higher nursing workload associated with higher perceived inappropriate care (OR = 1.50, 95% CI [1.08, 2.08])</p>
Pinelli (2000)	Family well-being	Cross-sectional, comparative, correlational, survey	124 family dyads in a neonatal ICU in Canada, State Trait Anxiety Inventory, FIRM (resources), F-COPES (coping), FAD-GF (adjustment), RR = 60%	<p>Fathers had lower adjustment scores than mothers ($t = 4.62, p < .001$)</p> <p>Mothers reported more resources ($t = 2.70, p < .008$) and coping ($t = 4.42, p < .001$)</p> <p>Mothers used coping strategies more often than fathers</p>
Plakas, Taket, Cant, Fouka, and Vardaki (2014)	Nurse provided family support, FCC	Qualitative, descriptive	25 family members from ICUs in Greece, Grounded theory	Family members needed to 'Interact with ICU professionals' – they relied on nurses to be integrated into the ICU system and tried to follow rules and be cooperative because "good" behavior was rewarded with longer visits. Conflicts with staff led to restricted visiting
Poncet et al. (2007)	Burnout, organizational	Cross-sectional, descriptive, survey	2,497 ICU nurses in France from different types of hospitals, MBI, Center for	Severe burnout in 32.8% of sample

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
	resources, ethical conflict		Epidemiological Studies Scale for Depression, RR = 57%	Type of hospital associated with severe burnout, with higher burnout found in teaching hospitals (nonteaching = 31%, teaching = 36%, $p = .01$) 4 characteristics associated with severe burnout: 1) personal characteristics, 2) organizational factors, 3) quality of working relationships, and 4) end-of-life factors (multiple decisions related to life-sustaining treatments)
Raiskila et al. (2016)	FCC, nurse provided family support	Cross-sectional, descriptive, correlational	262 family members and 11, 132 nurses from neonatal ICUs in Finland, Sweden, Norway, Estonia, Spain, an Italy, researcher developed FCC tool given via text messages and corresponding questions given to nurses in a survey, RR = 49% (family participation)	Significant variation about the quality of FCC at the unit level by country Lowest rated items, “participation in infant care”, “emotional support”, and “participation in decision-making” Nurses rated “emotional support” the lowest rating High correlation between nurse and family answers ($r = .81$ for mothers and $r = .70$ for fathers)
Rathert and Fleming (2008)	Organizational resources, ethical conflict	Cross-sectional, descriptive, correlational, survey	306 nurses from 15 units in one hospital in the United States, Benevolent Ethical Climate measure, Subscale of Quality in Action, AHRQ teamwork, RR = 42%	Positive relationship between ethical climate and teamwork ($r = .56$) and between continuous improvement leadership and teamwork ($r = .70$) The ethical climate explained 33% of the variance in teamwork, and was moderated by the level of continuous improvement leadership behaviors ($F = 40.01$, $p < .001$)
Reeves et al. (2015)	FCC, nurse provided support, organizational resources	Qualitative, descriptive	56 interviews with nurses, physicians and pharmacists, and family members, and 504 hours of observation in	Lack of nurse and physician collaboration with the exception of emergencies Family involvement positive when there was a strong, trusting relationship with staff

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			8 ICUs in North America, Ethnography	<p>Communication was variable among health care professionals and little involvement of families during patient rounds</p> <p>ICU and organizational policies influenced the degree to which family felt they could be involved in patient care, and expressed frustration as these policies were selectively enforced</p>
Riley, White, Graham, and Alexandrov (2014)	FCC, nurse provided family support, organizational resources	Qualitative, descriptive	Focus groups with 8 family members, 3 physicians, and 7 nurses from 5 ICUs in a hospital in the United States, focus group analysis	<p>Family members felt they were the best person to advocate and provide emotional support to their family member, and should always be involved. Family noted that the longer the ICU stay the more communication was taken for granted</p> <p>Nurses were divided about the role of the family with some opposing open visitation and others supportive. Some recognized the importance of the family's role in caring for the dying patient. Nurses stated that workload, and emergencies made communication with families difficult and the longer the patient stay the greater the family demands</p> <p>Physicians did view family role as important but did not think they needed to be physically present in the ICU or support open visitation</p>
Roscigno (2016)	Nurse provided family support, family well-being,	Qualitative, descriptive, secondary data analysis	29 parents of children with severe traumatic brain injury (experiences in acute care), Content analysis	<p>Parents described varying levels of interpersonal relationships with nurses-from just doing their job to deep connections</p> <p>Family was disadvantaged by hospital policies – visitation, involvement and incorporation of family beliefs into decisions</p> <p>Caring nurses recognized how the system disadvantaged family and tried to overcome those factors</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				Nurses who addressed the physical, psychological and cultural environment for family decreased family strain Caring nurses helped support family roles and taught them how to communicate with physicians
Rushton, Batcheller, Schroeder, and Donohue (2015)	Burnout, organizational resources, moral distress	Cross-sectional, correlational, 2 phased survey study	114 nurses from 2 neonatal, 2 oncology and 2 ICU units in 4 hospitals of one health system in the United States, MBI, MDS, Perceived Stress Scale, Resilience Scale, Meaning Scale, RR = 63%	No differences in burnout by unit/specialty Nurses with 3 to 10 years of experienced had highest mean scores for emotional exhaustion Moral distress increased with years of experience Moral distress associated with emotional exhaustion ($r = .49$), depersonalization ($r = .42$), and personal accomplishment ($r = -.20$) Moral distress was a significant predictor of all aspects of burnout Moral distress, resilience, spiritual well-being, meaning in patient care and hope explained 40% of the variance in burnout
Salem (2015)	Ethical conflict, moral distress, organizational resources	Cross-sectional, descriptive, correlational, survey	100 nurses from ICUs (medical, surgical and cardiac) and emergency departments at a hospital in Egypt, MDS, Nursing Stress Scale (workplace stressors), RR = not provided	Positive correlation ($r = .0443$) between nursing experience and moral distress High stressors were: dealing with death and dying, conflict with physicians, conflict with other nurses and supervisors, workload, uncertainty regarding treatment and staff shortages
Santiago, Lazar, Jiang, and Burns (2014)	FCC	Cross-sectional, descriptive, survey	160 health professionals (nurses, physicians and allied health) from a medical-surgical ICU in Canada, Researcher developed questionnaire on attitudes about family	54% of nurses strongly disagreed/disagreed that they would be comfortable allowing families to attend rounds 50% of the sample thought family presence prolonged rounds More experienced nurses had more reservations about families attending rounds-70% perceived that others had negative experiences with family at rounds

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			presence on rounds, RR = 72.4%	
Sauerland, Marotta, Peinemann, Berndt, and Robichaux (2014)	Organizational resources, ethical conflict, moral distress	Cross-sectional, descriptive, correlational	225 Nurses from a hospital in the United states, MDS, HECS, open ended questions (thematic analysis), RR = 23%	Moderate moral distress ($M = 3.79$, $SD = 2.21$) and low frequency ($M = 2.86$, $SD = 1.88$) Moderate HECS ($M = 94.39$, $SD = 18.3$) Positive relationship between years in nursing position and moral distress frequency ($r = .15$) Negative relationship between moral distress and ethical climate ($r = -.51$) Themes: 1) the environment of care, 2) providers of care, and 3) moral courage and residue
Schluter, Winch, Holzhauser, and Henderson (2008)	Organizational resources, moral distress, ethical conflict	Review of literature, systematic review	Literature from 1980 to 2007, 9 studies included	Causes of moral distress: poor quality of care, futile care, unsuccessful advocacy and unrealistic hope Effects: powerlessness, issues with provision of care, job dissatisfaction, turnover Moral distress and burnout have positive association Unsuccessful coping and frequency of experiencing moral distress positively correlated with leaving the profession
Segaric and Hall (2015)	Nurse provided family support, organizational resources	Qualitative, descriptive	13 nurses, 17 patients, and 10 family members from 10 acute care units in 4 hospitals in Canada, Grounded theory	Overall theme was 'progressively engaging' Three phases: 1) focus on tasks, 2) getting acquainted, 3) establishing rapport When nurses and families satisfied with relationship moved through phases quickly-greater sense of well-being for patient/family and nurses felt accomplished When relationship building did not go well families described a lack of interactions with nurses and family

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				<p>Some families felt nurses just did their jobs, while others described deep levels of engagement</p> <p>Nursing time and patient acuity were influential, and nurses had trouble demonstrating care and concern when workplace conditions were challenging</p>
Severinsson (2003)	Burnout, moral distress	Qualitative, descriptive	A nurse in Australia, content analysis	<p>Description of one nurse's experience with burnout – high demands, low level of control and feelings of powerlessness, lack of support and high levels of stress</p> <p>Moral distress led to self-blame. To cope she distanced herself in relationships with patients; however, this led to more distress due to a lack of emotional presence with clients</p>
Shields and Tanner (2004)	FCC	Psychometric testing	50 parents from inpatient and outpatient areas and 50 nurses in Australia, FCC survey	<p>FCC tool developed from literature and interviews with parents and staff</p> <p>FCC scale with 3 subscales: respect ($\alpha = .74$), collaboration ($\alpha = .79$), and support ($\alpha = .72$)</p> <p>Content validity established with panel of experts in psychosocial care of children</p> <p>No significant differences in staff and parent perceptions</p> <p>Lowest scores for support</p>
Shirazi, Sharif, Rakhshan, Pishva, and Jahanpour (2015)	FCC	Qualitative, descriptive	8 nurses from neonatal ICUs in Iran, Categorical analysis	<p>Challenges in nursing family care included: organizational factors (working conditions including time, workload, inadequate interprofessional communication, authoritarian management), family factors (aggressive family members), and nurse factors (exhaustion)</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Shoorideh, Ashktorab, Yaghmaei, and Alavi Majd (2015)	Burnout, moral distress, organizational resources	Cross-sectional, descriptive, correlational, survey	180 ICU nurses from 12 hospitals in Iran, researcher developed Iranian Moral Distress Scale, Copenhagen Burnout Inventory, Anticipated Turnover Scale, RR = 88%	Moderate moral distress ($M = 2.09$) and high burnout ($M = 53.36$) and high anticipated turnover Positive relationship between years of ICU nursing experience and moral distress ($r = .195$), and burnout ($r = .232$) Relationship between moral distress and nurse to patient ratio ($r = .266$)
Silén, Kjellström, Christensson, Sidenvall, and Svantesson (2012)	Organizational resources, ethical conflict	Qualitative, descriptive	20 nurses from 4 different acute care units at 2 hospitals in Sweden (selected due to high ethical climate scores), Critical Incident Technique	Themes related to a positive ethical climate: 1) Meeting needs – attending to the psychosocial needs of patients and other professionals, supporting each other, and having policies and routines to help with actions and 2) Sharing responsibility – collaborating, working as a team-especially when there were disagreements about aggressive treatments
Silén, Svantesson, Kjellström, Sidenvall, and Christensson (2011)	Organizational resources, Moral distress	Cross-sectional, descriptive, correlational, survey	249 nurses from 16 units (including ICUs) from 2 hospitals in Sweden, MDS, HECS, RR = 58%	Negative correlation with moral distress frequency and ethical climate ($r = -.328$) Approached significance: Nurses with 2.01 to 5.99 years had lower moral distress than those with 6 years or more (OR = .44, 95% CI [.191, 1.004] $p = .051$), and when a positive climate was perceived there were lower levels of moral distress (OR = .50, 95% CI [.231, 1.067] $p = .073$)
Slatore et al. (2012)	FCC, ethical conflict	Qualitative, descriptive	315 hours of observations of 6 patients with end stage liver disease and their families and interviews with 33 nurses who provided care to these patients from a cardiac-medical ICU in the United States, Thematic analysis	Most interactions focused on biopsychosocial domain Nurses primary role was as an intermediary or translator between patients, families, and physicians Nurses did not communicate with families in some situations because they did not feel it was their role Nurses rarely discussed code status or implications of life-sustaining treatment and when nurses noticed misunderstandings about life-sustaining therapies they seldom tried to address the problem

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Söderström, Benzein, and Saveman (2003)	Nurse provided family support, organizational resources	Qualitative, descriptive	10 nurses from 2 ICUs in Sweden, Content analysis	<p>Nurses all believed family care was a necessary part of their work</p> <p>Nurses did not actively engage families in planning, discussion or accomplishment of nursing care</p> <p>Most nurses believed family care could be improved with more education, tools for assessing and intervening with families, professional supervision and support related to working with families</p> <p>Nurses engaged in 1) inviting interactions with families – they were confident in their role and described a duty to keep family informed and to stay present at the bedside and 2) non-inviting interactions – nurses believed the technical aspects of patient care were most important and did not want family interference in their work</p> <p>Nurses also described difficulty providing support and comfort to families and feeling ineffective and “becoming hard and losing their compassion”</p>
Söderström, Saveman, Hagberg, and Benzein (2009)	Family well-being	Qualitative, descriptive	20 family members of patients on the ventilator from 3 ICUs in Sweden, Hermeneutical analysis	<p>Themes: 1) ‘Striving for endurance’ – trying to bring together family and deal with ICU environment 2) ‘Striving for consolation’ – giving and receiving emotional support, 3) ‘Striving to rebuild life under new conditions’ – high demand for resources post discharge and major difficulty if patient cannot assume original family role</p>
Sørli, Kihlgren, and Kihlgren (2004)	Organizational resources, ethical conflict	Qualitative, descriptive	5 acute care nurses working in a hospital in Sweden, Phenomenological hermeneutic analysis	<p>The work environment was very important – nurses needed a good manager and colleagues</p> <p>Lack of time led to insufficient care of patients</p> <p>When nurses could not meet the demands of the job they described distress</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Sprung et al. (2007)	Ethical conflict, moral distress	Cross-sectional, descriptive, correlational, survey	1,899 ICU Nurses, patients, families and physicians from Czech Republic, Israel, Netherlands, Portugal, Sweden and United Kingdom, Researcher developed questionnaire about attitudes about end-of-life decisions, RR = 43%	All respondents rated quality of life higher than value of life Nurses (87%) and physicians (88%) ranked quality of life higher in relationship to end-of-life decisions than patients (51%) and families (63%) ($p < .01$) In multivariate analysis patients (OR = 6.8, 95% CI [4.6, 10]) and families (OR = 4, 95% CI [2.8, 5.9]) considered value of life more important than quality of life – indicating that they were more likely to want treatment and patients (OR = 8.3, 95% CI [5.9, 11.9]) and families (OR = 6.3, 95% [4.5, 8.8]) were also more likely to want to be in the ICU with a terminal illness
Stayt (2007)	Nurse provided family support	Qualitative, descriptive	12 ICU nurses from a hospital in the United Kingdom, Heideggerian phenomenological analysis	Themes: 1) ‘Defining the nurses’ role’- what is expected of the nurses and not being able to meet the needs of families, 2) ‘Role conflict’ – divergence between what is expected and what can be accomplished. Nurses were not confident in the emotional aspects of family care Nurses may use emotional or physical distancing in relationships with families and this may result in inadequate family support
Stayt (2009)	Nurse provided family support	Qualitative, descriptive	12 ICU nurses from a hospital in the United Kingdom, Thematic analysis	Themes related to nurse emotional labor when caring for patients and families: 1) significance of death, 2) establishing trust, 3) information giving, 4) Empathy, 5) Intimacy, and 6) self-preservation – nurses had to create space between themselves and families to maintain control of the nurse-family relationship. They did this by asking closed ended questions, focusing on physical tasks with the patients and limiting communication

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Studdert et al. (2003)	Ethical conflict	Prospective, case-control, descriptive	656 patients admitted over an 11-month timeframe who had a length of stay in the 85 th percentile in 7 ICUs (medical and surgical) at 4 hospitals in the United States, conflicts determined from interviews with nurses and physicians	57.3% of conflict related to team-family disputes 30.6% team disputes 12.1% family disputes 44% reported poor communication created team-family conflict Patients with reported conflicts had higher risk of death (OR = 1.03, 95% CI [1.01, 1.05]), lower resource utilization scores (OR = .97, 95% CI [.95, .99]) and were more likely to be MICU patients (OR = 1.80, 95% CI [1.06, 3.04])
Suhonen, Stolt, Virtanen, and Leino-Kilpi (2011)	Organizational resources, ethical conflict	Review of literature	Organizational ethics literature from 1967 to 2010, narrative review	Evidence to support that organizations may handle the same ethical issue in variable ways, and ethics of patient care may conflict to those of the organization Few interventions aimed at improving organizational ethical climate
Sundin-Huard and Fahy (1999)	Burnout, ethical conflict, organizational resources	Qualitative, descriptive	10 ICU nurses from ICUs in Australia, Interpretive interactionism – one critical incident selected from larger study	Critical incident was situation in which a nurse tried to advocate for cessation of life-sustaining treatments when patient failed to respond and patient died before goals of care decided. Physician yelled at nursing staff but no one intervened including nurse manager Nurse emphasized power differentials and the fact that she had to comply or she would lose her job-ultimately left position due to burnout Nurses unable to advocate for patients may experience frustration, hurt, anger and moral outrage
Teixeira, Ribeiro, Fonseca, and Carvalho (2014)	Burnout, ethical conflict	Cross-sectional, descriptive, correlational, survey	300 nurses and physicians from ICUs in Portugal, MBI, Ethical decisions as part of daily activity in the ICU Questionnaire, RR = 67%	Ethical decisions made included: communication with patient family members (58%), followed by decisions about life-sustaining treatments (36%), informing of prognosis (29%), and need to withdraw treatment (27%) Most common ethical issue was withdrawal or withholding treatment

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				For nurses, positive correlation between burnout and the need to withdraw ($p = .032$), withhold ($p = .002$), or start terminal sedation for patients ($p = .005$)
Tekindal, Tekindal, Pinar, Ozturk, and Alan (2012)	Burnout, nurse provided family support	Cross-sectional, descriptive, survey	225 nurses from the ICU, internal medicine and survey and 222 family members at a hospital in Turkey, MBI, Nursing Services Satisfaction Inventory, RR = not reported	<p>High emotional exhaustion ($M = 27.16$, $SD = 6.27$), moderate depersonalization ($M = 9.28$, $SD = 3.11$) and low personal accomplishment ($M = 29.35$, $SD = 4.15$)</p> <p>Younger nurses (23 to 28 years) had higher emotional exhaustion and lower personal accomplishment than nurses 41 years and above</p> <p>Family expectations for nursing services ($M = 48.51$, $SD = 8.32$) was higher than perceptions about nursing services ($M = 34.05$, $SD = 7.46$), with families unsatisfied with approach of nurses, interactions with patients and family members, information given and attitudes toward family members</p>
Torke et al. (2016)	FCC, nurse provided family support	Pilot, feasibility study	26 family members (13 control and 13 intervention) randomized to the role of a family navigator (trained ICU nurse) in an ICU in the United States, Impact of Events Scale, Decisional Conflict Scale, Patient Health Questionnaire, Generalized Anxiety Disorder Questionnaire, and interviews with family and staff	<p>No differences for outcome measures</p> <p>Positive feedback from family members- stated they would recommend the family navigator to other family members and that support and counseling was comforting and gave optimism and relief</p> <p>Health care professionals felt that the navigator helped decrease frustration and establish goals of care more quickly</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Ulrich et al. (2007)	Organizational resources, ethical conflict, moral distress	Cross-sectional, descriptive, correlational, survey	1,215 nurses and social workers from 4 different states in the United States, HECS, Ethics Stress Questionnaire, Adapted Job satisfaction	<p>Most rated ethical climate slightly higher than neutral ($M = 97.3$)</p> <p>34.7% feeling overwhelmed when dealing with ethical problems and making ethical decisions, 32.5% reported powerlessness, 52.8% reported frustration or anger when unable to resolve an ethical issue and 68.2% reported being upset with others who avoid ethical issues, 62% reported ethical issues they could do nothing about</p> <p>Higher ethical stress was associated with lower job satisfaction ($r = -.44$) and higher intent to leave the position ($r = 1.0$)</p> <p>A better ethical climate (OR = .978, 95% CI [.96, .99]) and job satisfaction (OR = .864, 95% CI [.84, .88]) and perception of intuitional support for dealing with ethical stress (OR = .671, 95% CI [.45, .98]) were protective against intent to leave</p> <p>Job satisfaction mediated the relationship between ethical stress and intent to leave (Sobel's $z = 9.34$, $p < .001$)</p>
Van Horn and Tesh (2000)	Family Well-being	Cross-sectional, descriptive, survey	50 family members of 28 patients from 2 ICUs (surgical and cardiothoracic) in the United States, Modified Iowa ICU Family Scale, Social Readjustment Rating Scale, RR = not provided	<p>Most family members experienced less sleep and poor sleep quality, changes in eating patterns and 50% reported diminished appetite</p> <p>58% were tired and 26% very exhausted</p> <p>56% reported changes in family roles and positive changes included family support and togetherness</p> <p>44% reported that the nurse was a form of support</p> <p>54% reported that the ICU experience was a moderate to major life crisis</p>
van Mol, Kompanje, Benoit, Bakker, and Nijkamp (2015)	Burnout	Review of literature	Systematic review of burnout and compassion	<p>Burnout cut offs vary among studies</p> <p>Prevalence of burnout ranged from 16 to 46.5% in the ICU</p>

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
			fatigue from 1992 to 2014, 40 studies included	
Van Riper (2001)	Family well-being, nurse provided family support	Cross-sectional, descriptive, survey	57 mothers of preterm infants from 5 neonatal ICUs in the United States, Family-Provider Relationships Instrument-NICU, Ryff's measure of physiological well-being, General Scale of Family Assessment Measure, RR = 81%	Family income and maternal education associated with psychological well-being ($r = .44$) Mothers reporting positive family-centered relationships with their provider were more satisfied with care and greater willingness to seek help from health care providers Beliefs ($r = .32$), desires ($r = .33$) and feelings of satisfaction ($r = .29$) with health care providers were associated with mother's psychological well-being, even after controlling for family income and maternal education
Vandall-Walker and Clark (2011)	Nurse provided family support	Qualitative, descriptive	35 family members of 27 patients from 7 ICUs in Canada, Grounded theory	Main theme- 'Working to Get Through' - families had to work to gain access to their family member Long periods of waiting and worrying led to anger and frustration Being assertive was risky as it was likely to get a family member labeled as "difficult" and decrease access Family members look to nurses for access as they are in a position to welcome or deny them
Vasli, Dehghan-Nayeri, Borim-Nezhad, and Vedadhir (2015)	FCC	Qualitative, descriptive	Observations in a pediatric ICU in Iran to determine the culture of care, Ethnography	Main theme was paternalism: 1) environment was not designed for children and family needs, 2) children were not allowed to have any personal belongings, 3) limitations on parental visits and no place to stay the night or do personal hygiene, and 4) some staff thought that parents would interfere in care, 5) non-interactive communication, 6) parents received little information and education and had little involvement

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Verhaeghe, Defloor, Van Zuuren, Duijnste, and Grypdonck (2005)	FCC, nurse provided family support	Review of literature	A narrative review of literature related to the needs and experiences of family members in adult ICUs, 46 studies included	Information is greatest need for family members and this is not always met Nurses underestimate emotional needs of family members and do little to meet these needs
Wang, Feng, Wang, and Chen (2016)	FCC	Psychometric testing	249 family members of ICU patients in Southern Taiwan, Chinese Family-Centered Care Survey – Adult ICU (FCCS-AICU), RR = 90%	Added items to FCC-Adult Version Survey The Chinese FCCS-AICU was correlated with the Critical Care Family Needs Inventory ($r = .46$) Overall $\alpha = .93$ 5 subscales Respect ($\alpha = .58$), Support ($\alpha = .87$), Collaboration ($\alpha = .71$), Information ($\alpha = .90$) and Empowerment ($\alpha = .81$) Information and support accounted for 33% of the variance in FCC
Weis, Zoffmann, and Egerod (2015)	FCC, nurse provided family support, family well-being	Qualitative, descriptive, comparative	22 parent dyads of premature infants in the neonatal ICU at a hospital in Denmark, Intervention was a structured nurse-parent communication, 12 interviews with parents, Thematic analysis	The intervention was found to be helpful by parents, stating that they appreciated scheduled dialog with nurses The FCC intervention enhanced communication about parent needs, promoted more individualized care and helped parents give feedback about their experiences Parents in the standard care group felt supported only when nurses asked about their emotional, physical and psychological well-being; however, this only happened if the nurse stayed to talk to parents after infant care putting the burden on the parents to initiate conversation. These parents also thought supportive relationships with nurses were based on how well liked the parents were

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
White et al. (2012)	FCC, nurse provided family support	Single arm intervention, feasibility, Mixed Methods	35 family members, 15 patients, and 15 physicians from an ICU in the United States, Intervention was a family specialist who supported family with emotional responses, communication, decision making and anticipatory grief and collaborated with ICU team, Patient-Perceived Patient Centeredness of Care (adapted) measure, Quality of Communication tool, Decisional Conflict Scale, hospital mortality, 3-month mortality, 3-month functional status, Interviews with family members and physicians, RR = 55%	Intervention was perceived as feasible and acceptable by 90% of the sample, improved quality and timeliness of communication, facilitated discussion of patient values and improved patient centeredness of care Discordance between physician and family views about the likelihood of severe, long-term functional impairment of the critically ill family member was high before the intervention (physician estimate of 88% and family 66%). This significantly decreased after the intervention (physicians 88% and family 84%)
Whitehead, Herbertson, Hamric, Epstein, and Fisher (2015)	Organizational resources, moral distress, ethical conflict	Cross-sectional, descriptive, comparative	1,513 nurses, physicians, social workers, pharmacists, therapists, and dieticians at a hospital in the United States, MDS-R, HECS (shortened), RR = 28%	Nurses ($M = 84.1$) and other direct care providers had significantly higher levels of moral distress than physicians ($M = 47.6$) Moral distress significantly higher in the ICU versus all non-ICU settings, but only for nurses Of specialties, adult ICUs had higher moral distress than pediatric areas Negative relationship between HECS and MD ($r = -.516$)
Wiegand, Grant, Jooyoung, and Gergis (2013)	FCC	Review of literature	Narrative review on FCC in the ICU	Families not as informed or involved as they would like to be in the ICU Require a culture that supports families and addresses their needs

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
				FCC can be supported by 1) improving communication 2) consistent providers, 3) Family meetings, 4) Shared-decision making
Wilson et al. (2015)	Family well-being, FCC	Cross-sectional, descriptive, survey	Family members ($n = 54$), nurses ($n = 22$) and physicians ($n = 28$) from 2 ICUs (medical and medical-surgical) in the United States, Researcher created tool about decision-making, RR = 64%	Family members rated 23/32 pieces of information (patient comfort, family participation, daily plan, patient clinical status) higher than clinicians ($p < .05$) Family members rated the item "List of involved family members" higher than clinicians Health care professionals (HCP) rated the item "goals of medical care" higher than families Family members and clinicians rated family well-being (anxiety, depression, stress, grief and sleep) as requests for additional help as necessary information for HCP to know Both family members and HCP listed "consult services and recommendations", "frequency and timing of rounding", and "weekly schedule of nurses" as important in open-ended comments
Wong, Liamputtong, Koch, and Rawson (2015)	Nurse provided family support, FCC	Qualitative, descriptive	12 family members from an ICU in Australia, Grounded Theory, based on theoretical model of FCC	Main finding: families are constantly receiving or seeking out information from all health care professionals Nurses severed as a liaison between families and physicians Families experienced 'supportive communication' – reassurance, responding to nonverbal family cues, always being kept inform regardless of asking and 'unsupportive communication' – speaking in an abrupt or rude manner, inconsistent information and not supporting families while in the ICU Families described staff who 'kept a distance' from them

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Young, Derr, Cicchillo, and Bressler (2011)	Burnout	Cross-sectional, descriptive, comparative, survey	45 nurses from a heart and vascular ICU and 25 nurses from an intermediary care unit in the United States, Professional Quality of Life Scale, RR = not provided	64% of the ICU nurses had moderate levels of burnout Mean burnout score for ICU nurses was 25 versus 19 for intermediate care nurses ($p < .001$)
Zaforteza, García-Mozo, et al. (2015)	Nurse provided family support, FCC	Qualitative, descriptive,	60 ICU nurses from a hospital in Spain (Balearic Islands), Group discussion, field diary, Participatory Action Research	Factors limiting care to family care: 1) imbalance in power relationships among members of the interdisciplinary team, 2) avoidance of conflict 3) lack of nurse participation in information flows, and 4) unit organization -when conflict occurred, some nurses withdrew Factors facilitating family care: 1) attitudes and commitment, 2) leadership and serving as change agents for better family care, 3) reflective dialogue about family care
Zaforteza, Gastaldo, de Pedro, Sánchez-Cuenca, and Lastra (2005)	Nurse provided family support	Qualitative, descriptive	6 nurses from 3 ICUs in Spain (Island of Mallorca) and observation, Categorical analysis	Main finding: nurses felt a tension between information and not information family members Nurses reported ignoring or not paying much attention to family members When nurses interacted with family they were brief exchanges about minor issues Nurses believed they should not be the main source of information for the family Observations supported that nurses did not believe family members were clients
Zaforteza, Gastaldo, et al. (2015)	FCC, nurse provided family support	Qualitative, descriptive	8 nurses, 2 nursing assistants and 1 social worker from an ICU in Spain (Balearic Islands), Participatory Action Research	Institutional practices had to be challenged to get the unit culture to make a shift to being more family inclusive and patient and family-centered Nurses described problems with family members, conflicts with colleagues, and shortcoming in providing care to family members

Source	Concepts	Design	Sample, Measurements and Response Rate (RR)	Summary of Findings
Zhang, Huang, and Guan (2014)	Burnout	Cross-sectional, descriptive, survey	431 nurses from 14 ICUs in China, MBI-HHS, RR = 88%	<p>Nurses described a responsibility to respond to patient and family needs</p> <p>To provide better family care nurses need to 1) challenge power hierarchies between nurses and physicians 2) consensus about how culture should change 3) Shifting from individual perspectives to collective thought about family care</p> <p>16% had high burnout with high emotional exhaustion and depersonalization scores and low personal accomplishment</p> <p>25% of nurses working 5 to 10 years had high degree of burnout ($p = .02$)</p> <p>Nurses with a diploma had higher depersonalization scores ($p = .04$)</p>

Appendix B: Permissions

Thank you for your order!

Dear Mrs. Natalie McAndrew,

Thank you for placing your order through Copyright Clearance Center's RightsLink® service.

left

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Order Summary

Order Date: Nov 16, 2016
Order Number: 3990831395261
Publication: International Journal of Nursing Studies
Title: Further testing of a family nursing instrument (FAFHES)
Type of Use: reuse in a thesis/dissertation
Order Total: 0.00 USD

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**Permission for Natalie McAndrew to reproduce 150 copies
within one year of January 30, 2017**

Maslach Burnout Inventory™
Instruments and Scoring Guides
Forms: General, Human Services,
& Educators
(Includes General Survey - Students)

Christina Maslach
Susan E. Jackson
Michael P. Leiter
Wilmar B. Schaufeli
Richard L. Schwab

November 11, 2016

Natalie S. McAndrew, MSN, RN, ACNS-BC, CCRN
PhD Candidate, University of Wisconsin-Milwaukee

Dear Ms. McAndrew:

I am writing to grant you permission to use the tool, Hospital Ethical Climate Survey (HECS) in your dissertation research entitled "Relationships among ICU Climate of Care, Quality of Nursing Family Care, and Family Social, Emotional, and Physical Health".

I would appreciate your keeping me informed of your progress, and also of sharing your results when you have completed your research. This is a very exciting study that you are undertaking.

Thank you for your interest in this tool.

Sincerely,

A handwritten signature in black ink that reads "Linda L. Olson". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Linda L. Olson, PhD, RN, NEA-BC, FAAN

PERMISSION FOR USE

ETHICAL CONFLICT IN NURSING QUESTIONNAIRE – CRITICAL CARE VERSION (ECNQ-CCV)
(by Falcó-Pegueroles 2013)

As an author of the Ethical Conflict Nursing Questionnaire – Critical Care Version (ECNQ-CCV by Falcó-Pegueroles 2013) I reported that I have been informed by Mrs. **Natalie McAndrew** from University of Wisconsin-Milwaukee-United States for use the ECNQ-CCV in her study “ The influence of moral distress on family outcomes in critical care during end-of-life decisions making”

I give my approval for use the ECNQ-CCV as a part of this study.

I wish you luck in your research.

Best Regards



Anna Falcó-Pegueroles, PhD, MHSc, RN annafalco@ub.edu
Departament of Fundamental Care and Medical-Surgical Nursing. <http://www.ub.edu/infermeria/>
Campus of Health Science of Bellvitge-Health Universitat de Barcelona Campus (HUBC)
Central Pavillion, 3r floor. 08907 L'Hospitalet de Llobregat (Barcelona, Spain)
UNIVERSITY OF BARCELONA <http://www.ub.edu/web/ub/en/index.html>

From: Marion Mitchell <marion.mitchell@griffith.edu.au>
Sent: Sunday, November 6, 2016 6:23 PM
To: Natalie Susan McAndrew
Cc: Shields, Linda
Subject: Re: Permission to use Family-Centered Care Survey-Adult Version

Dear Natalie

Thank you for your email and interest. It is marvelous to hear of your proposed PhD - it sounds very interesting. I work in a Magnet Hospital ICU, so work culture is much talked about and extremely important [as is FCC of course!].

I've had to re-read my article & see where I said there was to be more testing - I now recall and therefore have included Prof Linda Shields in this email. Linda developed the initial FCC survey for the pediatric community area and is a co-author on the psychometric study.

Linda - I recall you may had had some of your UK medical ?registrars using your initial survey and reliability testing etc were planned. Am I correct? It was a while ago now.

Natalie - I think your reasoning of using the entire scale without the factors is OK & I'm sure your supervisors will give you excellent advice about that.

Appendix C: IRB Approval Letter

*Medical College of Wisconsin /
Froedtert Hospital
Institutional Review Board*

To: Natalie McAndrew
CC: Sylvia Dabrowski
Therese Cole
Kaylen Moore
Katie Klink
Jane Leske

Date: 3/27/2017

Re: Project Relationships among ICU Climate of Nursing Care, Quality of Nursing Family Care and Family
Title: Health and Well-being
PRO ID: PRO00029078

IRB Approval Date: 3/26/2017

IRB Expiration Date: 3/25/2018

The MCW/FH Institutional Review Board #5 has granted approval for the above-referenced submission in accordance with 45 CFR 46.111 by expedited review, Category 7.

Approval has been granted for the following institutions:

Froedtert & the Medical College of Wisconsin Hospitals and Health Partners
Froedtert Hospital Campus (including all specialty clinics, the Cancer Center and the Eye Institute)
UW-Milwaukee†

The IRB has granted approval of an alteration of the informed consent requirements at 45 CFR 46.116 for the nurse and family member surveys, as well as for consent of lucid patients. However, you must use the IRB-approved consent language.

Curriculum Vitae

Natalie S. McAndrew, MSN, RN, ACNS-BC, CCRN

EDUCATION

- 2017 **PhD** University of Wisconsin-Milwaukee, College of Nursing
Dissertation: Relationships Among Climate of Care, Nursing Family Care, and Family Well-being in the Intensive Care Unit
Defense Date: November 29, 2017
- 2009 **MSN** Alverno College, School of Nursing, Milwaukee, WI
Integrated Clinical Nurse Specialist and Nurse Educator Program
Thesis: Experiences of Nurses and Physicians when Making End-of-Life Decisions in the Intensive Care Unit
- 2004 **BSN** Alverno College, School of Nursing, Milwaukee, WI
Honors Graduate
Senior Research Project: Review of Literature-Care of the Family in the Intensive Care Unit
- 2002 **BA** University of Wisconsin-Madison, Department of Psychology
Senior Research Project: Attitudes about HIV as a Function of Sexual Orientation and Sexual Partners

PROFESSIONAL APPOINTMENTS/EMPLOYEMENT

- 2009-Present Clinical Nurse Specialist, Froedtert and the Medical College of Wisconsin
Froedtert Hospital, Medical Intensive Care Unit, Milwaukee, WI
- 2007-2009 Registered Nurse, Froedtert and the Medical College of Wisconsin
Froedtert Hospital, Medical Intensive Care Unit, Milwaukee, WI
- 2004-2007 Registered Nurse, Aurora St. Luke's Medical Center, Medical Respiratory
Intensive Care Unit, Milwaukee, WI

PUBLICATIONS

Peer Reviewed

Hetland, B., **McAndrew, N.S.**, Perazzo, J., & Hickman, R. (In press). A qualitative study of factors that influence active family involvement with patient care in the ICU: Survey of critical care nurses. *Intensive and Critical Care Nursing*.

Hetland, B., Hickman, R., **McAndrew, N.S.**, Daly, B. (2017). Factors that influence active family engagement in care among critical care nurses. *Advanced Critical Care*, 28(2), 160-170. doi: 10.4037/aacnacc2017118

Leske, J. S., **McAndrew, N. S.**, Brasel, K., & Feetham, S. B. (2017). Family presence during resuscitation after trauma. *Journal of Trauma Nursing*, 24(2), 85-96. doi: 10.1097/JTN.0000000000000271

McAndrew, N.S., Leske, J.S., & Schroeter, K. (2016). Moral Distress in Critical Care Nursing: The State of the Science. *Nursing Ethics*. Published online 9/23/16 doi: 10.1177/0969733016664975

McAndrew, N.S., Leske, J.S., Guttormson, J., Kelber, S.T., Moore, K., & Dabrowski, S. (2016) Quiet Time for Mechanically Ventilated Patients in a Medical Intensive Care Unit. *Intensive and Critical Care Nursing*, 35, 22-27. doi: 10.1016/j.iccn.2016.01.003

Kozeniecki, M., **McAndrew, N.S.**, Patel, J. (2015). ICU and Process Related Barriers to Optimizing Enteral Nutrition in a Tertiary Medical Intensive Care Unit. *Nutrition in Clinical Practice*, 31(1), 80-85. doi: 10.1177/0884533615611845

Zakzesky, D., Klink, K., **McAndrew, N.S.**, Schroeter, K., & Johnson, G. (2015). Bridges and Barriers: Patients' Perceptions of the Discharge Process including Multidisciplinary Rounds on a Trauma Unit. *Journal of Trauma Nursing*, 22(5), 232-239. doi: 10.1097/JTN.0000000000000146

McAndrew, N.S., & Leske, J.S. (2015). A Balancing Act: Experiences of Nurses and Physicians when Making End-of-Life Decisions in Intensive Care Units. *Clinical Nursing Research*, 24(5), 357-374. doi: 10.1177/1054773814533791.

Maidl, C., **McAndrew, N.S.**, & Leske (2014). Noise in the intensive care unit: Sound levels can be harmful. *Nursing 2014: Critical Care Journal* (September), 29-34. doi: 10.1097/01.CCN.0000453470.88327.2f

Leske, J.S., **McAndrew, N.S.**, Brasel, K.J. (2013). Experiences of Families when Present during Resuscitation in the Emergency Department after Trauma. *Journal of Trauma Nursing*, 20(2), 77-85. doi: 10.1097/JTN.0b013e31829600a8

Leske, J.S., **McAndrew, N.S.**, Evans, C.D., Garcia, A.E. & Brasel, K.J. (2012). Challenges in conducting research after family presence during resuscitation. *Journal of Trauma Nursing*, 19(3), 189-193. doi: 10.1097/JTN.0b013e318261d041

Schroeter, K., Byrne, M., Klink, K., Beier, M., & **McAndrew, N.S.** (2012). The Impact of Certification on Certified Perioperative Nurses: A Qualitative Descriptive Survey. *Operating Room Nurses Association of Canada*, 30(3), 34-46.

McAndrew, N. S., Leske, J.S., & Garcia, A. (2011). Influence of moral distress on the professional practice environment during prognostic conflict in critical care. *Journal of Trauma Nursing*, 18(4), 221-230. doi: 10.1097/JTN.0b013e31823a4a12

Published Abstracts

McAndrew, N.S., Leske, J.S., Guttormson, J. (2016). Quiet Time for Mechanically Ventilated Patients in a Medical Intensive Care Unit-Midwest Nursing Research Society PhD Student Award Abstract. *Western Journal of Nursing Research*, 38(10), 1374-1375. doi: 10.1177/0193945916658181

McAndrew, N.S., & Leske, J.S. (2014). A Balancing Act: Experiences of Nurses and Physicians when Making End-of-Life Decisions in Intensive Care Units (Abstract published for poster presentation at NTI) *American Journal of Critical Care*, 23 (3); e-19-e45. doi: 10.4037/ajcc2014238.

McAndrew, N., Garcia, A., Maidl, C., & Leske, J., Nanchal, R. (2011). Influence of moral distress on the professional practice environment in critical care (Poster Abstract). *American Journal of Critical Care*, 20, e57-e58.

McAndrew, N.S. (2010). Experiences of Physicians and Nurses when making End-of-Life Decisions in Intensive Care Units (2010 National Association of Clinical Nurse Specialists Student Poster Abstracts). *Clinical Nurse Specialist*, 24, 4, 215-216.

GRANTS AND FELLOWSHIPS

2017 – **Relationships Among Climate of Care, Nursing Family Care, and Family Well-being in the Intensive Care Unit** (Principal Investigator)
Froedtert Nursing Research Internship Grant - \$7,500
Froedtert Foundation – \$2,565
Building Bridges to Research Based Nursing Practice Grant – \$2,500
Sigma Theta Tau International-Eta Nu Research Grant – \$1,000

2016 – 2017- **Distinguished Dissertation Fellowship** at the University of Wisconsin-

Milwaukee (\$16,000)

2014 – 2016 – **Predoctoral Fellowship-Nurses of Wisconsin Incentive Grant**, University of Wisconsin, Milwaukee (\$86,000)

2013 – **Quiet Time for Nonverbal Patients in the Medical Intensive Care Unit** (Principal Investigator)
Froedtert Nursing Internship Grant - \$4,980

RESEARCH EXPERIENCE

2016-Present – **Integrating Palliative and Hospice Support across ICUs at an Academic Medical Center** (Principal Investigator)

2016-2017 – Collaborated with Dr. Breanna Hetland at Case Western University to analyze data on a study examining factors that affect family involvement in patient care. Assisted with qualitative analyses and coauthored 2 manuscripts related to the research project.

Hetland, B., **McAndrew, N.S.**, Perazzo, J., & Hickman, R. A qualitative study of factors that influence active family involvement among critical care nurses. Submitted to *Intensive and Critical Care Nursing*.

Hetland, B., Hickman, R., **McAndrew, N.S.**, Daly, B. (in press). Factors that influence active family engagement in care among critical care nurses. *Advanced Critical Care*.

2014-2015 – Assisted with data collection and manuscript for a study examining barriers to the delivery of enteral nutrition in critically ill patients.

Kozeniecki, M., **McAndrew, N.S.**, Patel, J. (2015). ICU and Process Related Barriers to Optimizing Enteral Nutrition in a Tertiary Medical Intensive Care Unit. *Nutrition in Clinical Practice*, 31(1), 80-85 (first published online October 15, 2015). doi: 10.1177/0884533615611845

2014-2015 – Assisted with data analysis (content and thematic analysis) and manuscript for a study examining patient perceptions of the discharge process after trauma/surgery.

Zakzesky, D., Klink, K., **McAndrew, N.S.**, Schroeter, K., & Johnson, G. (2015). Bridges and Barriers: Patients' Perceptions of the Discharge Process including Multidisciplinary Rounds on a Trauma Unit. *Journal of Trauma Nursing*, 22(5), 232-239. doi: 10.1097/JTN.0000000000000146

2012-2015 – **Quiet Time for Mechanically Ventilated Patients in a Medical Intensive Care Unit** (Principal Investigator)

McAndrew, N.S., Leske, J.S., Guttormson, J., Kelber, S.T., Moore, K., & Dabrowski, S. (2016) Quiet Time for Mechanically Ventilated Patients in a Medical Intensive Care Unit. *Intensive and Critical Care Nursing*, 35, 22-27. doi: 10.1016/j.iccn.2016.01.003

2010 to 2013 – Collected data for National Institutes of Health, National Institute for Nursing Research (funded \$700,000) study examining the impact of family presence after trauma in the emergency department (R21NR011063-01A2). Coauthor on 3 publications:

Leske, J. S., **McAndrew, N. S.**, Brasel, K., & Feetham, S. B. (2017). Family presence during resuscitation after trauma. *Journal of Trauma Nursing*, 24(2), 85-96. doi: 10.1097/JTN.0000000000000271

Leske, J.S., **McAndrew, N.S.**, Brasel, K.J. (2013). Experiences of Families when Present during Resuscitation in the Emergency Department after Trauma. *Journal of Trauma Nursing*, 20(2), 77-85. doi: 10.1097/JTN.0b013e31829600a8

Leske, J.S., **McAndrew, N.S.**, Evans, C.D., Garcia, A.E. & Brasel, K.J. (2012). Challenges in conducting research after family presence during resuscitation. *Journal of Trauma Nursing*, 19 (3), 189-193. doi: 10.1097/JTN.0b013e318261d041

2009 to 2011 – **Influence of moral distress on the professional practice environment during prognostic conflict in critical care** (Principal Investigator)

McAndrew, N. S., Leske, J.S., & Garcia, A. (2011). Influence of moral distress on the professional practice environment during prognostic conflict in critical care. *Journal of Trauma Nursing*, 18(4), 221-230. doi: 10.1097/JTN.0b013e31823a4a12

2009 – **A Balancing Act: Experiences of Nurses and Physicians when Making End-of-Life Decisions in Intensive Care Units** (Principal Investigator)

McAndrew, N.S., & Leske, J.S. (2015). A Balancing Act: Experiences of Nurses and Physicians when Making End-of-Life Decisions in Intensive Care Units. *Clinical Nursing Research*, 24(5), 357-374 (online first version of record 5/25/2014). doi: 10.1177/1054773814533791.

2009 – Assisted with literature review and data analysis on a qualitative research study examining the professional and personal effects associated with CNOR certification.

Schroeter, K., Byrne, M., Klink, K., Beier, M., & **McAndrew, N.S.** (2012). The Impact of Certification on Certified Perioperative Nurses: A Qualitative Descriptive Survey. *Operating Room Nurses Association of Canada, 30*(3), 34-46.

2008 – Supported data collection for a study that examined the reliability and validity of two pain assessment tools (PAINAD and CPOT) in the critically ill population.

2007 – Conducted interview with the family of a formally critically ill patient and performed content analysis on the family's responses to examine themes and link data to current theory and research related to nursing care of the family in the ICU

2007 – Conducted interview with a new graduate nurse working in a Medical Respiratory ICU-performed content analysis of the nurse's responses to examine themes and link the data to educational theory and research

PRESENTATIONS

National

McAndrew, N.S., Hoefs, S., Mayville, N., & Kroeninger, J. (2017). Why Are You Falling? An ICU Specific Falls Prevention Program in the Medical Intensive Care Unit. Poster Presentation at the American Association of Critical-Care Nurses National Teaching Institute Critical Care Conference May 22, 2017 in Houston, Texas.

McAndrew, N.S., Leske, J.S., & Guttormson, J. (2016). Quiet Time for Mechanically Ventilated Patients in a Medical Intensive Care Unit. Podium Presentation September 16, 2016 at the Council for the Advancement of Nursing Science (CANS) State of the Science Congress on Nursing Research- The Social Determinants of Health, Washington, D.C.

McAndrew, N.S. & Leske, J.S. (2014). A Balancing Act: ICU End-of-Life Decision- Making. Poster Presentation at the American Association of Critical-Care Nurses National Teaching Institute Critical Care Conference 2014 in Denver, Colorado.

McAndrew, N.S., & Lanham, B. (2013). Center for Transforming Healthcare – Safety Culture: Froedtert Hospital Control II Report Out. Oral presentation on June 20, 2013 at the Joint Commission in Oakbrook Terrace, IL.

McAndrew. N.S, Leske, J., & Garcia, A. (2011). What happens to Critical Care Nurses and their Patients? Survival Guide for the Professional Practice Environment. Oral presentation May 5, 2011 at the American Association of Critical-Care Nurses National Teaching Institute and Critical Care Exposition, Chicago, IL.

McAndrew, N.S., Garcia, A., Maidl, C., & Leske, J., Nanchal, R. (2011). Influence of moral distress on the professional practice environment in critical care. Research Poster Presentation at the American Association of Critical-Care Nurses National Teaching Institute and Critical Care Exposition, Chicago, IL, May 2011.

McAndrew, N.S. (2010). Experiences of Nurses and Physicians When Making End-of-Life Decisions in ICUs. Poster Presentation 3/4/2010 at the NACNS Conference in Portland, OR.

Regional

McAndrew, N.S. (2017). The Relationships Among Climate of Care, Nursing Family Care and Family Well-being for Family Members of Patients at Moderate to High Risk of Death.

Accepted Oral Presentation April 12, 2017 at the Midwest Nursing Research Society (MNRS) 42nd Annual Research Conference in Cleveland, OH.

Hetland, B., Hickman, R. **McAndrew, N.**, Daly, B. (2017). Factors that influence family caregiver contributions to care among critical care nurses. Poster Presentation April 8, 2017 at the Midwest Nursing Research Society (MNRS) 41st Annual Research Conference in Minneapolis, MN

McAndrew, N.S., Leske, J.S., & Guttormson, J. (2016). Quiet Time for Mechanically Ventilated Patients in a Medical Intensive Care Unit. Poster Presentation March 19, 2016 at the Midwest Nursing Research Society (MNRS) 40th Annual Research Conference, Milwaukee, WI

Kirchner, T., **McAndrew, N.S.** (2015). Moral Distress and Palliative Care: The Influence of the Health Care Climate. Oral presentation April 17, 2015 at the 4th Annual Great Lakes Regional Palliative Care Conference at the Grand Geneva Resort, Lake Geneva, WI.

Local

McAndrew, N.S. (2017). The Relationships Among Climate of Care, Family Nursing Care and Family Well-being in the Intensive Care Unit. Presented November 10, 2017 at the 11th Annual Froedtert Nursing Research Conference in Milwaukee, WI

Paul, S., **McAndrew, N.S.**, Hoefs, S. (2015). Partnering to Save Lives: Increasing Organ Referrals in the Medical Intensive Care Unit. Oral presentation October 1, 2015 at the Solid Organ Transplant Conference at the Medical College of Wisconsin, Milwaukee, WI.

Zakzesky, D., Klink, K., **McAndrew, N.S.**, Schroeter, K. (2015). Bridges and Barriers: Patients' Perceptions of the Discharge Process including Multidisciplinary Rounds on a Trauma Unit. Research poster presentation May 8, 2015 at the Building Bridges to Nursing Research Conference at Marquette University, Milwaukee, WI.

Schroeter, K., **McAndrew, N.S.** (2015). Who has the Patient's Best Interest in Mind? A Need for an Ethics Consult. Oral presentation for Nursing Grand Rounds on January 15, 2015 at Froedtert Hospital, Milwaukee, WI.

McAndrew, N.S., Dabrowski, S., Moore, K. (2014). Quiet Time for Mechanically Ventilated Patients in the Medical Intensive Care Unit. Oral presentation at Froedtert's 8th Annual Nursing Research Day in Milwaukee, WI.

Patel, J., Kozenicki, M., **McAndrew, N.S.**, Cole, T., Dabrowski, S., Harrison, J., & Moore, K., (2014). Barriers to Optimizing Enteral Nutrition in Medical Intensive Care Unit Patients. Research Poster presentation at the Medical College of Wisconsin Research Day, September 2014.

McAndrew, N.S. (2014). What Happens to Critical Care Nurses and their Patients? Translation of Moral Distress Research into Clinical Practice. Oral presentation for the 2014 Nursing Ethics Seminar at Froedtert Hospital, Milwaukee, WI.

McAndrew, N.S., Moore, K., & Dabrowski, S. (2014). Quiet Time for Mechanically Ventilated Patients in the Medical Intensive Care Unit. Research paper Presentation May 9, 2014 at the Building Bridges to Nursing Research Conference at Marquette University, Milwaukee, WI

Smith, J., Heidenreich, A., & **McAndrew, N. S.** (2014). Is Playing NICE enough? A Quality Improvement Initiative to Identify, Manage and Prevent Delirium on Inpatient Units at Froedtert Hospital. Poster presentation May 9, 2014 at the Building Bridges to Nursing Research Conference at Marquette University, Milwaukee, WI

McAndrew, N.S. (2014). Critical-Care Pain Observation Tool (CPOT): Consideration for use in our ICUs. Presented at Epic Steering Committee on January 20th at Woodland Prime, Menomonee Falls, WI

McAndrew, N.S. (2014). Moving to Improve Patient Outcomes: A Standardized Approach to Early Mobility on Inpatient Units at Froedtert Hospital (2014). Presented January 2, 2014 at Inpatient Steering Multidisciplinary Committee Meeting at Froedtert Hospital in Milwaukee, WI

McAndrew, N.S. (2013). Hospital-Acquired Delirium: A Real Problem. Presented at Nursing Shared Governance (Coordinating, Development and Practice Council) and Nurse Manager Meetings on December 11th and 19th at Froedtert Hospital in Milwaukee, WI

McAndrew, N.S. (2013). Ramsay or RASS for PCA and Epidural Use? Presented at Froedtert Nursing Practice Council, Pain Steering and PRP Committees on November 12th, 18th and 26th at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S. (2013). Critical-Care Pain Observation Tool (CPOT): Consideration for use in our ICUs. Presented at Critical Care Practice Council and PRP Committee on November 20th and 26th.

McAndrew, N.S. (2013). Quiet time for Mechanically Ventilated Patients in the Medical Intensive Care Unit. Research Poster Presentation at Froedtert Nursing Research Day October 30, 2013 at Froedtert Hospital, Milwaukee, WI.

McAndrew, N.S., Smith, J., & Heidenrich, A. (2013). Is Playing NICE enough? A Quality Improvement Initiative to Identify, Manage and Prevent Delirium on Inpatient Units at Froedtert Hospital. Presented at Froedtert Nursing Research Day October 30, 2013 at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S., & Lanham, B. (2013). MICU Culture of Safety Project: Status Update. Presented at organizational culture of safety meeting and MICU staff meetings on August 20, 21, and 29, 2013 at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S., & Koester, K. (2013). Standardizing Early Mobility in Critical Care. Early Mobility Protocol and Policy Presentation for Critical Care Committee presented at Froedtert Hospital on June 19, 2013 in Milwaukee, WI

McAndrew, N.S., & Leske, J.S. (2013). Research Challenges with Families in Crisis. Oral presentation at the Annual Building Bridges to Nursing Research Conference May 17, 2013 at Marquette University, Milwaukee, WI.

McAndrew, N.S. (2013). Challenges Associated with Research in Critical Care. Oral presentation April 9, 2013 at Froedtert Hospital, Milwaukee, WI.

McAndrew, N.S. (2013). Transforming Safety Culture in the MICU. Oral Presentation for Annual Froedtert Nursing Leader Summit. Presented on March 28, 2013 at Froedtert Hospital, Milwaukee, WI.

McAndrew, N.S. & Leske, J.S. (2012). Experiences of Families when Present during Resuscitation in the Emergency Department after Trauma. Oral Presentation at the annual Froedtert Hospital Nursing Research Conference on November 27, 2012 at Froedtert Hospital.

McAndrew, N.S., & Beiler, J. (2011). Preoccupation with Failure: A Culture of Safety is Born. Oral presentation at the Leadership Development Institute Conference on December 13, 2011 at the Hilton Garden Inn – Park Place Conference Center, Milwaukee, WI.

McAndrew, N.S., & Beiler, J. (2011). Culture of Safety Roadmap. Presented at the Joint Quality Committee on October 21, 2011 at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S. (2011). Moral Distress and Critical Care Nursing. Oral presentation on May 19, 2011 for the Froedtert Ethics Committee.

McAndrew, N.S., Beiler, J., & Gingras, L. (2011). Culture of Safety: Who Will Keep Me Safe? Presented for Nursing Grand Rounds on August 17, 2011 and August 23, 2011 at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S. (2011). What are the Core Measures and How do they Apply to the Medical Intensive Care Unit? Presented for the Medical ICU staff meetings on June 16, 2011 and June 23, 2011 at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S. (2011). Moral Distress and Critical Care Nursing. Presented on 5/19/2011 at the Froedtert Ethics Committee Meeting and on June 16, 2011 and June 23, 2011 for the Medical ICU staff meetings at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S., Beiler, J., Gingras, L. (2011). Froedtert Hospital and Culture of Safety Initiative. Presented at Nursing Strategic Planning Session on March 1, 2011 and on March 18, 2011 at the Joint Quality Committee meeting at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S. (2010). A Balancing Act: Experiences of Nurses and Physicians when making End-of-Life Decisions in Intensive Care Units. Presented to staff nurses on October 5, 2010 and October 14, 2010 at the Research Council and on Research day at Froedtert Hospital in Milwaukee, WI

McAndrew, N.S. (2010). Interventions to Improve Safety Culture. Presented at the Clinical Operations meeting at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S., Beiler, J., Gingras, L. (2010). Culture of Safety: A Collaborative Initiative. Presented at Inpatient Operations Meeting on April 23, 2010 and at the Patient Safety Steering Committee on May 21, 2010 at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S. (2010). Early Mobility and Critically Ill Patients: What does the Literature Tell Us? Presented at the Research Council Journal Club on August 3, 2010 at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S. (2010). Campaign Helping Hands: A Program to Increase Direct Nursing Care Time at the Bedside. Presented at MICU staff unit meeting on July 13, 2010 and July 20, 2010 at Froedtert Hospital, Milwaukee, WI

McAndrew, N. S., Garcia, A. (2010). Influence of Moral Distress on the Professional Practice Environment During Prognostic Conflict in Critical Care. Oral Presentation on May 13, 2010 at Building Bridges Conference at Marquette University, Milwaukee, WI.

McAndrew, N. S. (2010). Early Mobility in the MICU: Moving to Improve Patient Outcomes. Presented on March 23, 2010 at the MICU staff meeting at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S., Beiler, J., Gingras, L. (2010). Culture of Safety: A Problem statement and Plan of Action. Presented on March 17, 2010 at the CNS monthly meeting at Froedtert Hospital, Milwaukee, WI

McAndrew, N.S., Rogers, N, Schwingle, S. (2009). Reduction of Caregiver Stress: A Collaborative Initiative between Alverno College and Clement Manor. Presented May 2, 2009 at Clement Manor, Milwaukee, WI

McAndrew, N.S. (2008). Addressing Overtime in the SICU to Improve Nurse-Sensitive Patient Outcomes. Oral presentation November 28, 2008 to Froedtert Hospital CNO, Froedtert Hospital, Milwaukee, WI.

McAndrew, N.S. (2008). Nurse-Physician Interactions during End-of-Life Decision- Making in the Intensive Care Unit. Oral presentation May 3, 2008 at Alverno College, Milwaukee, WI.

McAndrew, N.S. (2008). Understanding the effect of difficult patient care situations on critical care nurses. Oral presentation April 25, 2008 at St. Mary's Hospital, Milwaukee Campus, Milwaukee, WI.

McAndrew, N.S. (2008). Grand Rounds Presentation: Hepatorenal Syndrome. Oral presentation April 25, 2008 at St. Mary's Hospital, Milwaukee Campus, Milwaukee, WI

McAndrew, N.S. (2008). Nurse-Physician Collaboration During End-of-Life Care in the ICU. Oral presentation February 16, 2008 at Alverno College, Milwaukee, WI.

McAndrew, N.S. (2007). Care of the Family in Crisis. Oral presentation November 30, 2007 at Alverno College, Milwaukee, WI.

McAndrew, N.S. (2007). Inhalation Injury and Acute Respiratory Distress Syndrome (ARDS). Oral presentation November 28, 2007 at St. Mary's Hospital, Milwaukee Campus, Milwaukee, WI

TEACHING EXPERIENCE

2017 – Taught gastrointestinal bleeding, Confusion Assessment Method for the Intensive Care Unit, Richmond Agitation and Sedation Scale, and Central Venous Access Devices for critical care orientation on September 13, 2017 at Froedtert Hospital

2017 – ARDS Update for Critical Care Nurses. An educational session presented June 7, 2017 and June 27, 2017 at Froedtert Hospital

2014-Present – Teach Acute Respiratory Distress Syndrome and a session on Reflective Nursing Practice and Ethical Conflict in the ICU setting for novice critical care nurses in orientation

2014 – Nursing Care for the Patient on High-Dose Aldesleukin (IL-2). Educational presentation to Medical Intensive Care Nurses on November 12, 2014 and November 19, 2014 at Froedtert Hospital

2013-2014 – Critical care scenarios with simulation manikin including Adult Respiratory Distress Syndrome, cardiac tamponade, sepsis and code 4 training for new critical care nurses at Froedtert hospital

2013 – Moving to Improve Patient Outcomes-educational session for nurses, physical and occupational therapists, and respiratory therapists for early mobility in the ICU. Presented December 13th, 19th and 20th, 2013 at Froedtert Hospital in Milwaukee, WI

2012 to 2015 – Practiced Advanced Cardiac Life Support Case scenarios each month for new residents rotating into the MICU at Froedtert Hospital

2012 – Sepsis lecture for Critical Care Nurse Orientation on July 26, 2012 at Froedtert

Hospital

- 2011-Present- Advanced Cardiac Life Support Instructor - teach at least 2 times per calendar year for Froedtert and the Medical College of Wisconsin.
- 2011 – Sepsis lecture for critical care nurse orientation on April 21, 2011 at Froedtert Hospital.
- 2011 – Gastrointestinal system case study presentation for critical care orientation on February 15, 2011 at Froedtert Hospital.
- 2010 – Assisted with Nurse Residency training on October 14, 2010 with simulation manikin at Froedtert Hospital.
- 2010 – Understanding Sepsis. Oral presentation on April 27, 2010 for Marquette nursing students at Froedtert Hospital, Milwaukee, WI
- 2010 – Taught delirium assessment and intervention for the Intensive Care Unit Skills day at Froedtert Hospital on April 1, 2010
- 2010 – Conducted an educational session for MICU residents and fellows at Froedtert Hospital about use of neuromuscular blockade medications in critically ill patients
- 2009 – Collaborated with members of the Cardiovascular Intensive Care Unit at Froedtert Hospital to develop a core educational curriculum for ICU nurses who recover post-operative cardiovascular surgical patients
- 2009 – Taught Hemodynamics and Gastrointestinal Disorders Course Content for Critical Care Classes at Froedtert Hospital on May 7, 2009 and May 26, 2009
- 2008-2009 – Developed critical thinking curriculum and taught course to novice ICU nurses at Froedtert Hospital, Milwaukee, WI.
Course focus: critical reflection on clinical nursing practice and case study analysis. Learning topics included: septic shock, cardiogenic shock, hypovolemia, adult respiratory distress syndrome, multiorgan failure, alcohol withdrawal, and pulmonary hypertension.
Evaluation: measured novice nurses' self-assessment of critical thinking skills prior to course and after completion of 7 classes (2.5 hour sessions).
- 2008 – Developed Hepatorenal Syndrome Tutorial. Published on Patricia Bowne's Advanced Pathophysiology Web Page:
<http://faculty.alverno.edu/bowneps/new%20indexes/msn6212008index.html>
- 2007-2008 – Teaching Assistant, BSN program, Alverno College, Physical Assessment Course, Milwaukee, WI
- 2007-2008 – Clinical Coach, Nurse Residency Program, Froedtert and the Medical College of

Wisconsin Froedtert Hospital

2003-2004 – Academic Assistant, Alverno College, BSN program, Pathophysiology Course,
Milwaukee, WI

TEACHING AREAS

Nursing Family Care
End-of-Life Nursing Care
Critical Illness
Nursing Ethics
Interprofessional Communication
Health Care Systems
Nursing Theory
Evidence Based Practice
Pathophysiology

SERVICE

University of Wisconsin-Milwaukee

2017 – Panel member for session, “Preparing for Comprehensive Exams”, Presented July 11,
2017 to the PhD online cohort, University of Wisconsin-Milwaukee.

2017 – Panel member for session, “PhD Student Perspective on Preliminary Examinations”
Presented at the Doctoral Student Nurses Organization (DSNO) May 1, 2017, University
of Wisconsin-Milwaukee.

2016 – Presented at the Research and Scholarship Academy Scholarship of Writing Workshop-
PhD Student Perspective on Effective Writing and Scholarship, September 30, 2016,
University of Wisconsin-Milwaukee.

2015-2017 – Member of the Doctoral Student Nurses Organization

Invited Presentations for Nursing Students

2014-2016 – Translating Research into Clinical Practice. Guest lecturer for nursing students at
Marquette University, Milwaukee, WI.

2014 – Understanding Ethical Conflict – Guest lecture for Marian University Students, Fond du
Lac Campus, WI

2014 – Early Mobility in Practice – Guest lecture for Marian University Students West Allis
Campus, WI

2010 – A Balancing Act: Experiences of Nurses and Physicians when making End-of-Life

Decisions in Intensive Care Units. Guest lecture for MSN students at Marquette University, Milwaukee, WI

2010 – The role of the CNS in the ICU. Presented to Alverno College MSN students, Milwaukee, WI

Professional

2017-Present – Secretary for the Midwest Nursing Research Society (MNRS) Acute and Critical Care Research Group (RIG), and planning committee member for the 2018 Acute and Critical Care Pre-Conference Session.

2017-Present, 2012-2014 – Planning committee member for annual Building Bridges to Research Based Nursing Practice Conference in Milwaukee, WI.

2013-Present – Reviewer for *American Journal of Critical Care Nursing*, *Critical Care Nurse*, *International Journal of Nursing Research*, *Clinical Nursing Research*, *Journal of Applied Gerontology*, *Journal of Trauma Nursing*, *Nursing Ethics*, *Applied Nursing Research*

2012 – Abstract reviewer for the 2013 National Association of Clinical Nurse Specialists Annual Conference

2011 – Served as a panel member for the Wisconsin Association of Clinical Nurse Specialists Annual CNS Conference October 17, 2011 at Waukesha County Technical College, Pewaukee, WI

Froedtert and the Medical College of Wisconsin Froedtert Hospital

2017 – Present – Oversee and coordinate nursing time and resources for interprofessional research in the Medical ICU at Froedtert and the Medical College Froedtert Hospital

2016-Present – Lead clinician on EnFIT transition – a safety mechanism that prevents feeding tubes from being connected to intravenous lines

2016 – Create, revise and provide content expertise on policies and practices for critical care

2015 – Served as clinical expert for Froedtert's 9th Annual Nursing Research Day on October 1, 2015 at Froedtert Hospital, Milwaukee, WI.

2013 – Present – Assist the Nursing Research Council with proposal review and mentor staff nurses through research process Froedtert and the Medical College Froedtert Hospital

2012-2017 – Member and content expert for an organizational project that aimed to prevent, decrease and provide early treatment for hospital acquired delirium

- 2012 – Served on communications committee for roll out of Patient Safety Week
- 2011 – Present – Serve as a mentor to staff nurses working to complete their professional development pathway at Froedtert Hospital
- 2011-2013 – Led Joint Commission Culture of Safety Project with a geographical focus on the MICU at Froedtert Hospital. This was a Collaborative project involving six other hospitals.
- 2011- 2012 – Six Sigma project to reduce insulin adverse and potentially adverse events
- 2010-2015 – Led an organizational initiative to assess and measure safety culture and develop targeted interventions at the unit and organizational level
- 2010-Present – Serve as a coach/mentor to MICU unit based shared governance. Oversee and support Quality and Research Councils
- 2009-2011 – Core team member of organizational project to decrease portable chest radiographs in the ICU setting – Project saved \$1 Million in annual charges to patients

Froedtert Hospital Committee Memberships and Contributions

- 2016-Present – CNS representative for Nursing Practice Council and Research Council
- 2014-Present – Ethics Committee
- 2012- Present – Supply Evaluation and Acquisition Committee
- 2012-2015 – Inpatient Business Process Team
- 2011-2016 – Patient Safety Steering Committee
- 2011-2016 – Schwartz Rounds Planning Committee – Organized educational sessions on complex and difficult patient cases within the hospital
- 2011- 2016 – Culture of Safety Steering Committee
- 2010-2015 – Central Venous Access Device Committee
- 2010-2012 – Chair for the Critical Care Nursing Council
- 2010- Present – Medication Safety Committee, Critical Care Practice Council and Critical Care Committee at Froedtert Hospital
- 2010-2012 – Member and proposal reviewer for Evidence Based Nursing Practice Committee

2008-2009 – Advanced Care Planning Steering Committee

AWARDS AND HONORS

2017 – Nominated for CNS 2017 Advanced Practice Award through Froedtert and the Medical College of Wisconsin.

2016 – MICU Silver Beacon Award from the American Association of Critical-Care Nurses-
Wrote application

2016 – Nominated for participation in the American Association for the Advancement of Science Program for Excellence

2016 – American Association of Critical-Care Nurses Continuing Professional Development Scholarship

2016 – Nominated for CNS 2016 Advanced Practice Award through Froedtert and the Medical College of Wisconsin.

2016 – Nominated by the Midwest Nursing Research Society (MNRS) to represent MNRS as the Distinguished Student Presenter for the Council for the Advancement of Nursing Science State of the Science Congress on Nursing Research in Washington, D.C.

2016 – Froedtert Hospital Advancement of Nursing Education Scholarship

2016–2017 – PhD Simon Ontscherenki Scholarship at the University of Wisconsin-Milwaukee

2016 – 1st place Student PhD Poster-Midwest Nursing Research Society Conference.

2015 – Nominated for CNS 2015 Advanced Practice Award through Froedtert and the Medical College of Wisconsin.

2014 – Inducted into Sigma Theta Tau International – Eta Nu Chapter

2014 – Froedtert Nursing Evidence-Based Practice award for implementation of an Early Mobility Policy and Guidelines for the ICU, Froedtert Hospital, Milwaukee, WI

2014 – Froedtert Nursing Research Award for the research study entitled, “Quiet Time for Mechanically Ventilated Patients in the Medical Intensive Care Unit”, Froedtert Hospital, Milwaukee, WI

2013 – Froedtert Nursing Evidence-Based Practice Award for work related to Bathing with Two Percent Chlorhexidine Gluconate (CHG) Impregnated Cloths to Reduce Hospital Acquired Infections in the ICUs, Froedtert Hospital, Milwaukee, WI

- 2013 – Received the Froedtert Nursing Research Award for the study Stability and Workload Index for Transfer (SWIFT) Score for Prediction of Unplanned Intensive Care Unit Readmissions, Froedtert Hospital, Milwaukee, WI
- 2010 – Received the Froedtert Nursing Research Award for the study, “The Influence of Moral Distress on the Professional Practice Environment”, Froedtert Hospital, Milwaukee, WI
- 2010 – Received 2nd place for student research poster- Experiences of Nurses and Physicians when Making End-of-Life Decisions in ICUs, National Association of Clinical Nurse Specialists Conference, Portland, OR
- 2006 – Nominated for Nursing Excellence Award, St. Luke’s Hospital, Milwaukee, WI
- 2004 – Graduated from Alverno College’s BSN Program with Honors, Outstanding Achievement in Academics and Clinical Nursing Experiences

PROFESSIONAL MEMBERSHIPS/AFFILIATIONS

- 2017 to present – Member of Council for the Advancement of Nursing Science (CANS)
- 2017 to present – Member of International Family Nurses Association (IFNA)
- 2016 to present – Member of American Association for the Advancement of Science (AAAS)
- 2015 to present – Member of Sigma Theta Tau, International (STTI), Eta Nu Chapter
- 2015 to present – Member of Midwest Nursing Research Society (MNRS)
- 2009 to 2013 – Member of National Association of Clinical Nurse Specialists (NACNS)
- 2009 to 2011 – Member of Society of Critical Care Medicine (SCCM)
- 2005 to present – Member of American Association of Critical-Care Nurses (AACN)

LICENSURE AND CERTIFICATIONS

- 2004-Present Registered Nurse, Wisconsin 149317-030
- 2010-Present Adult Clinical Nurse Specialist-Board Certified, American Nurses Credentialing Center Certification: 2010009153
- 2012-Present Adult Cardiac Life Support Instructor, American Heart Association
- 2006-Present Adult Critical Care Certified Nurse, American Association of Critical-Care Nurses