MORAL DISTRESS AMONG CERTIFIED REGISTERED NURSE ANESTHETISTS IN INDEPENDENT PRACTICE VERSUS MEDICALLY SUPERVISED PRACTICE

A DOCTORAL PROJECT

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By

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ABSTRACT

The purpose of this exploratory, descriptive study was to determine if there is any difference in moral distress levels between certified registered nurse anesthetists (CRNAs) working in medically supervised practice versus independent practice. The California CRNA population (1,190) was administered a 63-question survey, yielding demographic, quantitative, and qualitative data for 175 respondents. Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) 22.0. An independent samples t test suggested that medically supervised CRNAs had higher moral distress scores (176.8) versus independent practice CRNAs (187.8; p = .002). A chi-square analysis revealed that CRNAs in independent practice generally were male (p = .016) and worked in ambulatory surgery centers (p < .001). Independent practice CRNAs demonstrated lower moral distress scores versus supervised CRNAs who typically scored within the moderate distress range (p = .034). A conventional content analysis of the qualitative data showed CRNAs experienced moral distress when: pressured to give anesthesia to unoptimized patients, differences of opinion regarding anesthetic plans occurred, dealing with end-of-life issues, working with incompetent providers, and during interprofessional struggles between CRNAs and anesthesiologists. Implications for practice suggest increased administrative support, increased communication and reciprocated collegial respect between anesthesiologists and CRNAs, and ethics committee representation.
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BACKGROUND

Certified registered nurse anesthetists (CRNAs) have been practicing anesthesia for over 150 years and were considered the first advanced practice nursing specialty (California Association of Nurse Anesthetists, 2013). According to the American Association of Nurse Anesthetists (AANA) website, over 45,000 CRNA members exist throughout the nation, with approximately 41% being men, as compared to approximately 10% of nonadvanced practice nurses (AANA, 2013b). In California, CRNAs practice in many facilities with varying levels of anesthetic allowances. Practice levels range from medically directed to complete independence without physician supervision.

For this doctoral project, a replication study was conducted utilizing Dr. Radzvin’s (2011) original study entitled, “Moral Distress in Certified Registered Nurse Anesthetists: Implications for Nursing Practice.” Permission to replicate the study was obtained from Dr. Radzvin (Appendix A). The purpose of this replication study was to provide descriptive, exploratory research that analyzed the effect of moral distress on CRNAs in independent practice versus medically supervised practice. Variables utilized in the original study were analyzed, with the addition of the type or scope of practice of CRNAs in California.

Moral distress is defined as pain or anguish in relation to circumstances where an individual understands and is aware of a moral dilemma but due to perceived constrains acts in a manner that is morally wrong even though he or she acknowledges what is morally right (Nathaniel, 2002). Moral distress can profoundly affect not only the mind but the body as well, providing a sense of despair, disequilibrium, and even hostility in
the work environment that can compromise patient care and nurse satisfaction (Maluwa, Andre, Ndebele, & Chilenba, 2012). Due to this threat to patient care, moral distress is critically important especially when concerning CRNAs whose daily responsibilities include regulating many critical physiologic functions in order to provide surgical services that otherwise could not be performed. CRNAs provide a service that requires optimal mental and physical conditions in order to perform their jobs appropriately.

Since 1986, CRNAs have had the ability to receive direct reimbursement from Medicare (California Association of Nurse Anesthetists, 2013). With Governor Schwarzenegger’s decision to have California CRNAs opt-out of physician supervision, increasing numbers of CRNAs have ventured into private practice. Congress passed the opt-out rule in November 2001 and Governor Schwarzenegger signed it into law in June 2009 (Lyttle, 2010). This rule facilitates the option to remove the mandate of physician supervision of nurse anesthesia practice (Lyttle, 2010). The current changes within the U.S. healthcare system will further require professional and cost-effective anesthesia services that this opt-out decision supports.

California is one of the leaders of CRNA practice in the nation and since the opt-out CRNAs have become far more independent in their practice. Due to this fact, as nurses, there is a completely different level of responsibility in patient care. In this respect, the concept of moral distress levels among CRNAs with the new opt-out legislature is unresearched. An exhaustive literature review was done to discover the current state of the evidence. To date, many studies address moral distress in nursing practice, but only three have specifically looked at moral distress involved with CRNAs and their practice (Maluwa et al., 2012; Mauleon, Palo-Bengtsson, & Ekman, 2005;
Radzvin, 2011). However, none of these three articles compared the type of practice (independent versus supervised/medically directed) and its effect on moral distress.

One example of moral distress as a CRNA is the dilemma of whether or not to take a patient who has a do not resuscitate (DNR) status to the operating room. These are patients or their advocates who have determined that if for any reason their vital signs cease to function, they would not want any lifesaving efforts performed. In general, these lifesaving functions primarily include cardiovascular pulmonary resuscitation (CPR), vasopressor medications to maintain cardiac output, and intubation (insertion of an endotracheal tube into the trachea).

When a patient agrees to surgery and is taken into the operating room, typically an endotracheal tube is used for intubation so general anesthesia can be administered. If the patient is sick enough to be of DNR status, it may be a challenge to provide the perfect anesthetic that will allow for extubation (removal of the endotracheal tube). Herein lies the moral dilemma. This patient may not be able to be extubated safely. If this is the case, the patient would have to be taken to the intensive care unit where he or she is on a form of life support with ventilator-assisted breathing and without certainty that he or she will ever be able to be extubated. This is against the patient’s wishes. Many research studies showed that a great deal of the moral distress that nurses feel are typically related to end-of-life care and the overaggressive nature of treatment (Jenkins, 2006; Pavlish, Brown-Saltzman, Hersh, Shirk, & Rounkle, 2011; Varcoe, Pauly, Storch, Newton, & Makaroff, 2012; Wiegland & Funk, 2012). Reversing a DNR order so that a patient may have surgery is oftentimes considered overaggressive.
Every individual (physician, nurse, respiratory therapist, etc.) contains within himself or herself a different set of moral guidelines. What one individual may consider immoral and unsafe, another may disagree and consider it to be completely safe. One example that is frequently encountered in supervised practice is the issue of nil per os (NPO) status prior to anesthesia. There is a certain standardized and evidence-based set of guidelines distributed by the American Society of Anesthesiologists (ASA) that describe the type of food intake and the time necessary to assume that a patient’s stomach has emptied prior to the induction of anesthesia. Typically, any patient that has eaten solid foods should wait 8 hours until induction of anesthesia (unless it is an emergent procedure).

Frequently situations occur where surgeons, anesthesiologists, nurse anesthetists, and others have expedited taking patients into the operating room prior to meeting the ASA NPO guidelines. This is typically due to provider time constraints and the urge to complete the work presented so that the providers can go home instead of waiting the appropriate amount of time for NPO clearance. Situations such as this in supervised practice occur frequently and CRNAs typically feel the pressure to bring these patients to the operating room prior to meeting the proper NPO criteria. To make up for proceeding with the surgery before appropriate NPO status has been achieved, the providers might do what is known as a rapid sequence induction (RSI). An RSI involves certain maneuvers that help prevent aspiration of stomach contents in patients who have not met the NPO status. If pulmonary aspiration does occur in a situation like this and the CRNAs and anesthesiologists were taken to court, there is little defense of such a decision. It is of poor moral and ethical standards.
Moral distress in nursing practice is inevitable. CRNAs are not the only providers caring for the patients. Physicians, other types of nurses, dieticians, physical and speech therapists, clergy, and other ancillary personnel care for patients and have their own personal opinion on how patients should be cared for. Family members provide patient care as well and bring with them their own experience and expertise to the forefront of patient care.

There is a substantial amount of evidence demonstrating the importance of researching moral distress and its effect on nurses, but not specifically nurse anesthetists. However, Radzvin (2011) revealed that CRNAs do experience moral distress, with a small number of anesthetists at high levels and most at moderate levels of moral distress. Radzvin (2011) also found an inverse relationship between age and levels of moral distress. As CRNAs age, their levels of moral distress decrease. The reason for this is unclear. It is possible that those with greater levels of experience have learned some form of coping mechanism that allows them to experience less moral stress. It is also possible that CRNAs become jaded as they are constantly being bombarded with moral dilemmas. Another study claims that having less knowledge and experience leads to greater levels of moral distress (Yoes, 2012).

Radzvin (2011) noted that CRNAs experienced frustration, anger, guilt, powerlessness, and physical symptoms (headaches and stomachaches) in response to ethical dilemmas regarding their practice. Also reported was a fear of losing one’s job, status, and financial security. De Veer, Francke, Truijs, and Willems (2013) found that registered nurses who were less satisfied with their jobs had higher levels of moral distress \( (r = -0.34, p < 0.000) \).
Interestingly, some of Radzvin’s (2011) findings concerning CRNAs did not occur in other nursing specialties. McAndrew, Leske, and Garcia (2011) concluded that there is no significant effect between nursing experience and level of moral distress. The same authors noted that there was an inverse relationship between moral distress and collegial relationships (McAndrew et al., 2011). Wiegland and Funk (2012) stated that work-related moral distress for registered nurses did affect personal relationships, both with colleagues and with family and friends. In research conducted among registered nurses (not CRNAs), it appeared the most common reason for moral distress was caring for a patient at his or her end of life (Wiegland & Funk, 2012).

It is clear that CRNAs experience moral distress, but it may be dissimilar from that experienced by other advanced practice nurses or by registered nurses not in advanced practice. Further research is necessary to understand the differences in moral distress between CRNAs in independent practice and CRNAs in physician anesthesiologist medically supervised practice.

**Study Purpose**

The purpose of this replication study was to provide a descriptive, exploratory research study that analyzed the effect of moral distress on CRNAs in independent practice versus medically supervised practice. Demographic variables were analyzed and compared, such as was done in the original study by Radzvin (2011), but with the addition of one aspect. The additional information addressed the type of CRNA practice in California after the 2009 opt-out of physician supervision regulation. A major goal of this study was to determine whether a difference in moral distress levels exist in CRNAs practicing independently versus those in medically supervised practice.
Research Questions

There are three specific research questions to be explored in this study. These first two research questions are taken from Radzvin (2011) and the third is a new question to address independent practice compared to medically supervised anesthesia practice:

1. What levels of moral distress are experienced by CRNAs, as measured by the Ethics Stress Scale?

2. How do levels of moral distress correlate with demographic variables that include, but are not limited to, age, years of experience, and educational level?

3. What effect does practicing under medical supervision versus independent practice have on levels of moral distress in CRNAs, as measured by the Ethics Stress Scale?

Theoretical Framework

The model chosen as the theoretical framework in Radzvin’s (2008) dissertation study and also used in this study was the moral distress model by Wilkinson (1988). Wilkinson’s theoretical model defines moral distress as “the psychological disequilibrium and negative feeling state experienced when a person makes a moral decision but does not follow through by performing the moral behavior indicated by that decision” (p. 16). Wilkinson states that nurses hold the good of the patient as their most important value. As Wilkinson stated, if there is anything that threatens the delivery of good care, then that thing deserves investigation and elucidation. This is why moral distress in CRNAs is an important phenomenon to study.

Wilkinson (1988) discussed the fact that nurses are involved in the critical life events of their patients and are constantly making ethical decisions, both consciously and
unconsciously. This model recognizes that moral distress can arise from a variety of sources. External constraints include physicians, the law and/or lawsuits, both nursing and hospital administration, licensing bodies, employing institutions, polices, and the patients and families themselves. Internal constraints include being socialized to follow orders, fear of losing one’s job, self-doubt, lack of courage, and the futility of past actions (Wilkinson, 1988). This substantive theory is about the relationship between the moral aspects of nursing practice and quality of patient care. Overall, Wilkinson discovered that nurses’ moral frameworks tended to revolve around consequences rather than rules. This is true with the exception of lying to patients. Nurses did not speculate on the consequences of lying; there was no question that telling the truth is fundamentally part of their nature.

In Wilkinson’s (1988) moral distress model (see Figure 1), the author surmises that once nurses recognize a moral dilemma, they use their cognitive moral framework and feelings of empathy to influence their decisions about which actions are morally good. The level of nursing experience and knowledge of available options does play a role in the level of their moral distress. Nurses consider the perceived as well as actual contextual constraints that help guide or block their appropriate moral decision. Disequilibrium results from the inability to act morally. Those nurses with some feeling of control tend to compensate well, maintain wholeness, and give good patient care. Those with negative coping behaviors tend to become overwhelmed, hindering patient care. In turn, there is the possibility of nurses having to make a choice between leaving the profession altogether or staying within nursing and further damaging their own sense of wholeness and quality of patient care.
Figure 1. Moral distress model. Adapted from “Moral Distress in Nursing Practice: Expertise and Effect,” by J. Wilkinson, 1988, *Nursing Forum*, 23(1), p. 26. Reprinted with permission; see Appendix B.
REVIEW OF THE LITERATURE

Search Methods

For this section of the literature review, the article exclusion criteria were as follows: (a) articles must relate to CRNAs and moral or ethical distress, (b) they have to be written in English and not another foreign language, and (c) they have to be relevant to the topic at hand. A combined PubMed, CINAHL, Cochrane, and PsycINFO search using the search terms *moral distress anesthesia* revealed four publications. Two articles were excluded due to being written in a foreign language and the two remaining articles were duplicate work by Radzvin. Dr. Radzvin noted that she was unable to uncover any information regarding moral distress in CRNA practice. However, she did find a substantial amount of information regarding moral distress and registered nurses in general, of which she based some ideas for her research.

Another combined PubMed, CINAHL, Cochrane, and PsycINFO search using the search terms *nurse anesthetist AND moral stress* revealed two publications, with one being a duplicate article from the previous search. Search terms were modified further utilizing the same search engines. The new search terms *nurse anesthetist* AND *ethic* revealed 58 publications. These publications were then further limited based on language and irrelevance. Duplicated articles and studies that were published from 2005 and later were also excluded. Due to the overall lack of information on moral distress, publications dating back to 2005 were accepted for this doctoral research review when specifically relating to CRNAs and ethical or moral distress. There were eight remaining articles of use for a total of 10 articles having relevance to nurse anesthetists and moral or ethical distress.
With search terms exhausted involving nurse anesthetists, a general search for moral distress in nursing was conducted for further information on the effect of moral distress in nursing practice. For this section of the literature review, the article exclusion criteria were as follows: (a) articles must be less than 5 years old (inclusion dates being from May of 2008 to May 2013), (b) they have to be written in English, and (c) they have to be relevant to the topic at hand. A combined PubMed, CINAHL, Cochrane, and PsycINFO search using the search terms nurse AND moral distress revealed 88 publications ranging from the years of 2006 to 2013. These publications were then further limited as discussed above, bringing the total number of publications used from this search to 47.

**Synthesis of Literature**

To synthesize the current evidence, the articles critiqued all revealed that nurses in general do experience varying levels of moral distress. There is a growing recognition in the literature concerning moral distress in every specialty (Pijl-Zieber et al., 2008). However, as mentioned previously, to date, only three articles conducted research on CRNAs and moral distress specifically. These articles indicate that CRNAs, similar to RNs, do experience moral distress in their practice.

Of the articles reviewed, both CRNAs and registered nurses in general knew the right course of action to take in an ethical dilemma but had difficulty following through with it due to some perceived constraint. The most common findings for the cause of moral distress in CRNAs appeared to be conflicts between the CRNAs and the physicians working with them as well as constraints from hospital regulations (Jenkins, 2006; Maluwa et al., 2012; Pijl-Zieber et al., 2008; Radzvin, 2011). With nonadvanced practice
nurses, another of the most common causes of moral distress was initiating extensive lifesaving actions to prolong the death of a futile patient (Papathanassoglou et al., 2012). Nonadvanced practice nurses did experience moral distress with physician treatment plans as well. Registered nurses felt that along with prolonging death, one of the most morally distressing situations were when nurses did not agree with a physician’s treatment plan and felt it went against patient wishes (De Veer et al., 2013; Papathanassoglou et al., 2012).

Other common findings were that both nurses and CRNAs experienced role conflict, moral distress, physical distress, frustration, fear, anger, worry, and exhaustion when dealing with ethical dilemmas (Atashzadeh, Ashktorab, & Yaghmaei, 2012; Lawrence, 2011; McAndrew et al., 2011; Pijl-Zieber et al., 2008; Radzvin, 2011; Wiegland & Funk, 2012; Varcoe et al., 2012). One study showed that as CRNAs age and level of experience increased, their level of moral distress decreased (Radzvin, 2011). In contrast, several other studies on nonadvanced practice registered nurses found no significant correlation between the level and frequency of moral distress and age (De Veer et al., 2013; Silen, Svantesson, Kjellstrom, Sidenvall, & Schistensson, 2011). Silen et al. (2011) demonstrated in registered nurses a lower level of moral distress in the 2 to 6 years of experience range versus those with greater than 6 years of experience; this finding did not achieve statistical significance \( p = 0.051, \text{OR} = 0.44, 95\% \ CI = 1.1004).\) De Veer et al. (2013) did not demonstrate any significant relationships between age, gender, years of experience, and job position and the intensity of moral distress. McAndrew et al. (2011) concluded that there is no significant relationship between nonadvanced practice nursing experience and level of moral distress.
In a qualitative study by Atashzadeh et al. (2012), four main themes emerged when uncovering the reasons behind moral distress in nonadvanced practice nurses. These four themes were: (a) institutional barriers and constraints; (b) communication problems; (c) futile actions, malpractice, and medical/care errors; and (d) inappropriate allocation of responsibilities, resources, and care worker competencies. One participant in the study stated, “When I want to protest to management that something is wasteful or that it affects patient care, I am ignored. It will reflect on my work, and I will lose my job” (Atashzadeh et al., 2012, p. 472).

In another qualitative study, CRNAs felt like they failed themselves and questioned external directives from other health care professionals and organizations when ethical dilemmas arose (Mauleon et al., 2005). Mauleon et al. (2005) also noted that CRNAs felt that they had to suffer personally for the judgments they made even when correct. Maluwa et al. (2012) found that frustration and burnout were common results.

Another study suggested that moral distress may be related to lack of experience and knowledge (Yoes, 2012). CRNAs often felt that their mode of improving care was challenged by other professionals with different viewpoints (Mauleon et al., 2005). Overall, CRNAs experiencing moral distress appear to struggle to break through the barriers before them and overcome problems so that they may provide appropriate care to their patients (Jenkins, 2006; Mauleon et al., 2005). This finding is echoed in other nursing research not pertaining specifically to CRNAs, noting that moral distress has an impact on job satisfaction, burnout, and the ability to act as a patient advocate to provide appropriate care (Wiegland & Funk, 2012; Wocial & Weaver, 2012). Wocial and Weaver (2012) found that registered nurses who had never considered leaving the profession of
nursing had lower levels of moral distress than those who considered leaving the profession \( (p < .001) \). In a Swedish study, Silen et al. (2011) concluded that a positive ethical climate correlated with less frequent occurrences of moral distress.

Please see the Tables of Evidence located in Appendices C and D. Appendix C contains information from nonexperimental descriptive studies and Appendix D covers qualitative studies.
METHODS

Ethical Considerations

The California State University, Fullerton, Institutional Review Board approved this study to ensure protection of human subjects (Appendix E). Included with this study was a cover letter, a modified demographics survey (as was originally designed by Radzvin in 2008), and the Ethics Stress Scale. Within the cover letter, a brief description of the research project was given, including the method of survey recipient selection as well as the right to refuse consent. Implied consent was achieved when the anonymous surveys were completed and returned to the primary investigator within the specified time period. The cover letter discussed the protection of anonymity by eliminating all personal identifying information prior to the return of the survey through SurveyMonkey.

Sample

The sample was obtained from the AANA registry. This study was specifically geared towards CRNAs residing in California instead of Pennsylvania, which was the state Dr. Radzvin (2011) selected for her sample. Due to the scope of the questions in the Ethics Stress Scale, students and graduate registered nurse anesthetists were excluded from the sample. Only active members who were certified and recertified registered nurse anesthetists with voting powers were included in the survey. This is because the Ethics Stress Scale asked participants to consider each question in relation to their work environment within the last year, of which students and possibly graduate nurse anesthetists have not yet had the chance to complete this requirement. According to the AANA, members were categorized as being either active (certified, recertified, life, or
emeritus), inactive, conditional, honorary, or associate (student, graduate, or international) nurse anesthetists (AANA, 2013a).

In order to obtain a substantial sample, all CRNAs within California were surveyed. The total number of certified and recertified registered nurse anesthetists in California during October 2013 was 1,190. No randomization was necessary due to the entire CRNA population of California being sampled. Permission to disseminate the survey was obtained from the AANA (Appendix F).

**Instruments**

There were two instruments utilized, as were used in Radzvin’s (2008) dissertation study. The first instrument was a demographics survey developed by Dr. Radzvin (2008) and further modified with Dr. Radzvin’s consent to add the identification of practice supervision or independence. The second tool, the Ethics Stress Scale, underwent no changes at all so as to retain high levels of already verified reliability and validity.

**Demographics Survey**

The demographic data were collected using a 10-item demographics table. This tool gathered data concerning age; ethnicity; marital status; gender; highest educational degree; current employment setting; employment status; years of practice as a CRNA; years with current employers; and current practice as a CRNA working in either a supervised, independent, or combination of both types of practices at multiple sites (Appendix G).
**Ethics Stress Scale**

The Ethics Stress Scale was originally developed and used by Raines (1994) and Tymchuk with their study on registered nurses and the effect their ethical decisions had on them. This tool was developed for nurses who were not advanced practice nurses. To date, no tool has been developed specifically for advanced practice nurses. Hence, this tool is used as a surrogate until further research reveals a more specific tool for advanced practice nurses.

The Ethics Stress Scale is a self-administered 56-question instrument (Appendix H). The first 52 questions measure the respondent’s level of ethical stress by using a Likert-type response set. Questions 53-56 are questions about the use and helpfulness of various resources for coping with the respondent’s ethical stress. These questions were excluded from the analyses because they did not determine the level of moral distress experienced by the respondents.

Content validity was established with the use of a 4-option Content Validity Index rating scale (Raines, 1994). This scale was used by a group of advanced practice nurses who were exposed regularly to ethical dilemmas. The Content Validity Index was calculated to be 0.89, $p < 0.05$. Content reliability was established using test-retest methodology, with a coefficient of $r = 0.82$, $p < 0.005$. Cronbach’s alpha was 0.87, with a mean of 3.64.

Permission to use the Ethics Stress Scale was obtained from Dr. Tymchuk, who was the only author still living today (Appendix I).
Data Collection

An electronic survey package was sent to study participants identified by the AANA as CRNAs residing in California. The survey package was sent from the AANA offices and included: (a) a cover letter with implied consent, (b) the demographics survey, and (c) the Ethics Stress Scale. A response rate of 10-30% was expected. To improve the response rates, a follow-up reminder to each California CRNA surveyed was emailed by the AANA 2 weeks after the initial emailing.

Data Management

The completed data received from the AANA in an EXCEL spreadsheet was converted to a Statistical Package for the Social Sciences (SPSS) version 22 document. All returned electronic information from anonymous CRNAs was kept in a password-protected flash drive at the investigator’s personal residence. The data were then cleaned by recoding the categorical answers into numerical digits for computation purposes. The Ethics Stress Scale was developed with positive and negative subscales. As was done in previous research, the positive subscale ratings were reverse coded prior to analysis.

Data Analysis

In following Dr. Radzvin’s (2008) dissertation research, the use of the Ethics Stress Scale proved to be challenging due to the death of one of the original developers of the tool. Dr. Radzvin (2008), her dissertation committee, and Dr. Tymchuk (one of the original authors) worked together to categorize the first 52-questions in the Ethics Stress Scale into specific subscales. These included cognitive positive (16 questions) and negative (seven questions) subscales as well as affective positive (seven questions) and negative (14 questions), and behavioral positive (four questions) and negative (four
questions). This study did not specifically analyze the different subscales; only the total Ethics Stress Scale scores were used.

**Quantitative Analysis**

All quantitative analysis techniques are discussed in the *AANA Journal* manuscript (Appendix J).

**Qualitative Analysis**

To help substantiate the findings of the Ethics Stress Scale, one additional open-ended question was asked. This question involved asking if we (the researchers) can have a few examples of concepts or incidences that cause moral distress in their practice as a CRNA. The respondents were free to write as much or as little as they liked. To analyze the data, the responses were subjected to an analysis technique called conventional content analysis. This is a qualitative analysis technique that allows the authors to pull out themes directly from the data. Polit and Beck (2012) described the structure of this type of qualitative analysis. For this study, the researcher, the chair, and the committee member read, reduced, and coded the data line by line for each participant. The strongest themes are reported and described in the *AANA Journal* manuscript (Appendix J) in the results section with many direct quotes accompanying them.
RESULTS

A manuscript outlining findings from this study was developed as part of this project (Appendix J). Results unable to be included in the manuscript due to space limitations are reviewed here. Appendix K contains the author guidelines for the AANA Journal.

Sample Description

In terms of the descriptive statistical analysis, the majority of respondents were between the ages ranges of 31-40, 41-50, and 51-60, fairly equally. The overwhelming majority of the subjects were of Caucasian descent, accounting for 139 (79.4%) of the total subjects, with a distant second being those of Asian descent. Similarly, the majority of the CRNAs who responded were married (n = 125, 71.4%). More of the respondents were female (n = 103, 58.8%) than male (n = 72, 41.1%). Overwhelmingly, the majority of respondents were practicing with a master’s degree (n = 138, 78.9%), with the second most common degree being that of a doctorate (n = 15, 8.6%).

The primary worksites for the majority of CRNAs were that of hospitals/medical centers (n = 140, 80.0%), with a few being at ambulatory surgery centers (n = 22, 12.6%). The majority of respondents were those practicing between 1 and 5 years (n = 53, 30.3%), although it was not statistically significant. Overwhelmingly, the majority of the CRNAs being studied were employed full time (n = 133, 76.0%), with a few employed part time or of casual employment. None were unemployed. A little over half the sample responded as being medically supervised (n = 98, 56%), with 53 (30.3%) practicing independently and 22 (12.6%) working at multiple sites with varying levels of independence (see Table 1).
Table 1

Sample Demographic Characteristics by Practice Type

<table>
<thead>
<tr>
<th></th>
<th>Independent</th>
<th>Supervised</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>37 (53.6%)</td>
<td>32 (46.4%)</td>
<td>.016</td>
</tr>
<tr>
<td>Female</td>
<td>37 (35.9%)</td>
<td>66 (64.1%)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>.387</td>
</tr>
<tr>
<td>24-30</td>
<td>4 (33.3%)</td>
<td>8 (66.7%)</td>
<td></td>
</tr>
<tr>
<td>31-40</td>
<td>15 (34.9%)</td>
<td>28 (65.1%)</td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>21 (46.7%)</td>
<td>24 (53.3%)</td>
<td></td>
</tr>
<tr>
<td>61-60</td>
<td>21 (42.9%)</td>
<td>28 (57.1%)</td>
<td></td>
</tr>
<tr>
<td>61+</td>
<td>14 (58.3%)</td>
<td>10 (41.7%)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td>.454</td>
</tr>
<tr>
<td>African American</td>
<td>1 (50.0%)</td>
<td>1 (50.0%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>6 (30.0%)</td>
<td>14 (70.0%)</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>64 (46.0%)</td>
<td>75 (54.0%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>2 (40.0%)</td>
<td>3 (60.0%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1 (16.7%)</td>
<td>5 (83.3%)</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
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<td></td>
<td>.523</td>
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<tr>
<td>Single</td>
<td>9 (34.6%)</td>
<td>17 (65.4%)</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>57 (45.6%)</td>
<td>68 (54.4%)</td>
<td></td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>8 (38.1%)</td>
<td>13 (61.9%)</td>
<td></td>
</tr>
<tr>
<td>Educationa</td>
<td></td>
<td></td>
<td>.567</td>
</tr>
<tr>
<td>BS/BSN</td>
<td>6 (46.2%)</td>
<td>7 (53.8%)</td>
<td></td>
</tr>
<tr>
<td>MS/MSN</td>
<td>55 (39.9%)</td>
<td>83 (60.1%)</td>
<td></td>
</tr>
<tr>
<td>Doctorate</td>
<td>8 (53.3%)</td>
<td>7 (46.7%)</td>
<td></td>
</tr>
<tr>
<td>Primary Place of Employment</td>
<td></td>
<td></td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Ambulatory surgery Center</td>
<td>17 (77.3%)</td>
<td>5 (22.7%)</td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>50 (35.7%)</td>
<td>90 (64.3%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8 (72.7%)</td>
<td>3 (27.3%)</td>
<td></td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
<td>.582</td>
</tr>
<tr>
<td>Casual</td>
<td>5 (55.6%)</td>
<td>4 (44.4%)</td>
<td></td>
</tr>
<tr>
<td>Part-time</td>
<td>15 (48.4%)</td>
<td>16 (51.6%)</td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>55 (41.4%)</td>
<td>78 (58.6%)</td>
<td></td>
</tr>
<tr>
<td>Practice Setting</td>
<td></td>
<td></td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Independent</td>
<td>53 (100.0%)</td>
<td>0 (0.0%)</td>
<td></td>
</tr>
<tr>
<td>Medically supervised</td>
<td>0 (0.0%)</td>
<td>98 (100%)</td>
<td></td>
</tr>
<tr>
<td>Multiple settings/levels of practice</td>
<td>22 (100.0%)</td>
<td>0 (0.0%)</td>
<td></td>
</tr>
</tbody>
</table>
Table 1 (continued)

<table>
<thead>
<tr>
<th>Years as a CRNA</th>
<th>Independent</th>
<th>Supervised</th>
<th>( p )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>3 (33.3%)</td>
<td>6 (66.7%)</td>
<td>.195</td>
</tr>
<tr>
<td>1-5 years</td>
<td>11 (28.2%)</td>
<td>28 (71.8%)</td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td>12 (42.9%)</td>
<td>16 (57.1%)</td>
<td></td>
</tr>
<tr>
<td>11-15 years</td>
<td>16 (57.1%)</td>
<td>12 (42.9%)</td>
<td></td>
</tr>
<tr>
<td>16-20 years</td>
<td>9 (49.9%)</td>
<td>13 (59.1%)</td>
<td></td>
</tr>
<tr>
<td>21-25 years</td>
<td>4 (36.4%)</td>
<td>7 (63.6%)</td>
<td></td>
</tr>
<tr>
<td>26+</td>
<td>20 (55.6%)</td>
<td>16 (44.4%)</td>
<td></td>
</tr>
</tbody>
</table>

Note. \( n_s = 166 \) to 173.

*Other educational categories were removed from analysis due to small sample size.

**Quantitative Results**

A total of 175 participants had complete or nearly completed surveys. Those respondents who skipped a question on the Ethics Stress Scale could not be used for the majority of the comparative results due to a lack of complete Ethics Stress Scale data. Thus, only 157 participants with complete data were used for any analysis utilizing the total Ethics Stress Scale scores.

Radzvin’s (2008) calculated ranges for the Ethics Stress Scale scores were used in this study to determine the level of moral distress the participants were experiencing. Radzvin’s (2008) study demonstrated a range of total Ethics Stress Scale scores from a minimum of 130 to a maximum of 238. For the Ethics Stress Scale, low scores indicate a higher level of moral distress. Radzvin’s (2008) level of distress ranges were as follows: (a) a score of 161 or below was considered indicative of high moral distress, (b) a score between 162 and 188 (the median) were considered to be indicative of moderate moral distress, and (c) anything above 189 was considered indicative of low levels of moral distress.

Of the 157 completed surveys, the total Ethics Stress Scale scores ranged from a low score of 117 to a high score of 232. This range was lower than the range in Radzvin’s
(2011) research, which indicates a higher level of moral distress among participants in this sample. The mean Ethics Stress Scale score in this sample was 181.3 and the median was 182.0. This demonstrates that there were no significant outliers in the data gathered. Of note, both of these numbers were less than the median (188) identified in Radzvin’s (2008) research, indicating an overall higher level of moral distress in the California population versus the sample taken from Pennsylvania by Radzvin (2008).

Figure 2 represents the total Ethics Stress Scale scores within a histogram. Here, high levels of moral distress are those participants who scored less than 161. Moderate moral distress scores are those participants who scored within the range of 162-188.

![Figure 2. Total Ethics Stress Scale scores (n = 157).](image)

Table 1 presents sample demographics separated into practice type, both medically supervised practice and independent practice. There were significantly more female CRNAs in medically supervised practice than in independent practice \((p = .016)\). Also of significance, hospitals were the primary workplace for most of the supervised sample participants, while independent practice CRNAs tended to have higher ratios of working for ambulatory surgery centers or “other” types of institutions \((p < .001)\).

An independent samples \(t\) test revealed, among this sample of 156 CRNAs in California, there was a statistically significant difference in the mean moral distress scores between medically supervised CRNAs \((176.8)\) and independent practice CRNAs \((187.8)\), \(t_{(154)} = 3.10, p = .002\). This indicates that medically supervised CRNAs had a higher level of moral distress than those in independent practice, although both scores still ranked in the moderate distress range.

An additional chi-square analysis was conducted to analyze the demographic differences between the respondents who completed the surveys \((n = 157)\) and those who skipped one or more questions \((n = 18)\). No significant differences were seen. The number of nonrespondents was very low and there did not appear to be any similarities between the nonrespondents and the questions they skipped on the Ethics Stress Scale.

**Qualitative Results**

All qualitative results are discussed in the AANA Journal manuscript (Appendix J).
DISCUSSION

Overall, this study suggests that CRNAs do experience moral distress in their clinical practice, whether working in independent practice or supervised practice. The majority of CRNAs in this study experienced moderate levels of moral distress in their practice. Although there were relationships between two variables (marital status and practice setting) and the total moral distress scores, this study did not validate Radzvin’s (2011) findings regarding moral distress and age. However, there did appear to be some relationship between being single and having a higher level of moral distress. The reason for this is likely multifactorial. The sample of single CRNAs was relatively small compared to the sample of married CRNAs and so perhaps a larger sample would yield different results.

The study does suggest that there is a significant difference in moral distress levels among CRNAs practicing independently compared to those who are medically supervised. Those who work in independent practice do experience less moral distress as compared to those who work under supervision by an anesthesiologist. Once again, the reasons for this could be multifactorial. One reason is likely the practice setting. Among respondents in this study, more independent practice CRNAs worked for ambulatory surgery centers, while more supervised CRNAs worked at hospitals or medical centers. It is likely that those CRNAs working at larger facilities with sicker patients have higher levels of moral distress. This is a potential explanation of why CRNAs who are medically supervised have higher levels of moral distress than their counterparts who work in independent practice. However, contrastingly, the qualitative data when analyzed does show that more independent practice CRNAs (n = 9, 26.5%) have concerns regarding
end-of-life surgeries and ethical dilemmas than do supervised CRNAs ($n = 5, 16.1\%$). This may be due to supervised CRNAs relinquishing ethical responsibility by allowing the physician anesthesiologist to determine the appropriate course of action. Another possible reason for independent practice CRNAs having lower levels of moral distress is they have a higher level of autonomy, allowing them to do what they feel is best for their patients regardless of collegial discontent with their decisions.

In the qualitative study by Atashzadeh et al. (2012), they described four main themes when uncovering the reasons behind moral distress in nonadvanced practice nurses. These four themes were: (a) institutional barriers and constraints; (b) communication problems; (c) futile actions, malpractice, and medical/care errors; and (d) inappropriate allocation of responsibilities, resources, and care worker competencies. Themes one, three, and four were described by the nurse anesthetists responding in this study, showing similar moral distress themes between CRNAs and nonadvanced practice nurses.

Jenkin’s (2006) study on CRNAs and ethical dilemmas also reflected much about what was discovered during this study. Jenkins concluded that the first and second most disturbing ethical issues for CRNAs were working with incompetent or impaired colleagues and prolonging the dying process, respectively. Jenkins also noted that CRNA-physician conflicts ranked as the sixth most disturbing issue. Similarly, the qualitative results of this study demonstrated that CRNA-physician conflicts ranked fifth among the themes identified.

In another qualitative study, registered nurses demonstrated similar findings in that unnecessary patient suffering and incompetent colleagues were highest ranking themes generated (Varcoe et al., 2012). Similarly, another study on registered nurses
showed repeating themes such as quality at the end of life, substandard healthcare, making decisions for vulnerable patients (i.e., consent issues), and communication breakdown for nurses who wished to report ethical concerns (Pavlish et al., 2011).

Many CRNAs reported in this study conveyed that their jobs might be in jeopardy for reporting issues with their coworkers. This is similar to the findings by Mauleon et al. (2005) and Maluwa et al. (2012), whereby CRNAs felt they had to suffer personally by being mistreated by colleagues and supervisors for the judgments they made even when correct. This sense of suffering and vulnerability resulted in frustration and burnout.

Implications for Practice

The primary implications for practice involve minimizing the moral distress levels of CRNAs in both supervised and independent practice settings. In this study, CRNAs in both types of practices demonstrated a higher level of moral distress than CRNAs in Pennsylvania in Radzvin’s (2011) research. It may be impossible to completely extinguish ethical dilemmas, but perhaps this research will help us learn more about the factors that cause CRNA moral distress and develop strategies to address those. Lowering moral distress by providing a therapeutic environment should increase one’s sense of self and overall professional well-being by reducing burnout (Lawrence, 2011; Maluwa et al., 2012; McAndrew et al., 2011). Expanding on the development of a therapeutic environment, research has shown that educating CRNAs and their leaders on moral distress may help practices to be more proactive in intervening in these situations (McAndrew et al., 2011).

As part of the therapeutic work environment, this study suggests further support of CRNA practice is needed from administrators. CRNAs felt there was a double
standard held by administration. CRNAs should be held at the same standard as other medical professionals. It has been suggested that if CRNAs perceive greater level of support from colleagues of all levels (administration, supervising anesthesiologists, surgeons, etc.) in terms of ethical decision making, then perhaps moral distress can be decreased (Bell & Breslin, 2008; Radzvin, 2011; Varcoe et al., 2012). In return, CRNAs should offer the same support to their colleagues as well so that all members of the healthcare team can continue to grow and improve the quality of patient care by decreasing their own mental anguish. This concept is known as true collaboration, whereby the unique qualities, knowledge, and abilities of each professional are respected so as to maintain safe and quality care for patients (McAndrew et al., 2011).

In addition to a therapeutic work environment, some research demonstrates spousal support as a strong alleviator of anguish over ethical dilemmas (Radzvin, 2011). Another practice issue involves CRNAs being assertive in nature when it comes to opening a dialogue in regard to morally distressing issues (Pavlish et al., 2011; Radzvin, 2011). Improvements in communication skills may help improve collegial relationships and allow for a greater level of discussion regarding morally distressing issues and their effects on CRNAs and other providers or colleagues. Building team cohesiveness that focuses on patient-centered treatment may also be of benefit (Pavlish et al., 2011). The creation of an ethical climate involving ethics committees may also be useful in this respect by validating CRNA reasons for moral distress and looking at ways to reduce its occurrence (Lawrence, 2011; Maluwa et al., 2012; Pavlish et al., 2011; Radzvin, 2011; Varcoe et al., 2012).
Several studies suggested that educational and departmental in-service programs that discuss ethics and its role in the perioperative time period may foster a greater level of dialogue between CRNAs and physicians (Pavlish et al., 2011; Radzvin, 2011). This, in turn, may increase CRNA support systems, which may reduce CRNA levels of moral distress. Overall, CRNAs need to improve their communication, collaboration, and advocating capabilities (Pavlish et al., 2011). CRNAs and other healthcare providers are particularly vulnerable to moral distress in high-risk situations (like end-of-life surgeries) and need more ethics education and managerial support (Pavlish et al., 2011).

The implications of this study suggest continuing to research moral distress and its complexity in order to determine methods to help alleviate its manifestation. This phenomenon is pervasive among not only CRNAs but also among nonadvanced practice nurses. It is unknown whether or not other types of advanced practice nurses experience similar forms of mental anguish or not. Further research should also be done to reveal the perspectives of anesthesiologists, surgeons, and other healthcare providers regarding moral distress.

**Conclusion**

In conclusion, the results of this research study confirmed previous study findings regarding moral distress. CRNAs do experience moral distress that in many cases is very similar to the issues causing moral distress in nonadvanced practice nurses. Moral distress is a critically important concept, especially for CRNAs who provide a service that requires optimal conditions both mentally and physically in order to perform their jobs safely. Further research is necessary, especially when trying to identify resources that could help alleviate the moral distress of CRNAs. When morally distressing issues
do arise, CRNAs need to know what the best route to alleviate their mental anguish is and how to go about achieving it.
REFERENCES


APPENDIX A

EMAIL CORRESPONDENCE—DR. LINDA C. RADZVIN

Michael,

Congratulations on the completion of your study. I am so happy for you. And yes, I remember our previous emails. I am pleased to grant you permission to use any figures, tables or concepts from my dissertation within your own study for replication and publication. However I must stipulate that you utilize my dissertation and not the article that was published in AANA Journal. Copyright ownership for the article belongs to AANA. I hold the copyright for my dissertation. I have attached a copy of my dissertation to prevent further delay since you are facing a looming deadline.

I would be very grateful if you could send me a copy of your study whenever you have an opportunity.

Best,

Linda

Considering A Replication of your Moral Distress Study
From Radzvin, Linda C.
Michael Dumouchel

Michael,

I think your idea for a research study is fascinating. I did not know of the opt out provision and I think this is an excellent area for the study of moral distress.

I had a wonderful response from the sample of CRNAs and found their responses very enlightening. I do need to tell you a few things regarding the Ethics Stress Scale. I did not develop the scale and I do not hold the copyright. The scale was designed by Dr. Marcia Raines who is deceased and Dr. Alexander Tymchuk who is retired from UCLA. If you are interested in using the scale you would need to contact him. The most recent email address I have for him is ___________________. There is another CRNA who is currently using the scale in her research study. Her name is Brenda Wands and I can give you her email address if you think that would be helpful.

I think the Ethics Stress scale has value but the scoring was a bit of an issue since Dr. Raines' notes could not be located and her dissertation did not contain a complete guide for calculating the scores or even which questions were in which subscale. I assigned questions with the help of my committee members. I would be able to provide you with my copy of the grading scale, as well as information on the factor analysis that was performed. I could also provide you with my dissertation since this has much more information that the article.
Please feel free to contact me if I can be of further assistance.

Best
Linda

Linda C. Radzvin, PhD, RN, CRNP
Professor and Program Director
Surgical Technology Program
CCAC Boyce Campus
595 Beatty Rd
Monroeville, PA 15146
FAX: 724-325-6701
e-mail: lradzvin@ccac.edu

From: Michael Dumouchel
Sent: Tuesday, October 30, 2012 11:18 PM
To: Radzvin, Linda C.
Subject: Considering A Replication of your Moral Distress Study

10/29/12
Linda Clerici Radzvin, RN, PhD, CRNP
Professor of Surgical Technology
Community College of Allegheny County
Email: lradzvin@ccac.edu

I am a current CRNA and a DNP student at Cal State University, Fullerton. In consideration for my doctoral project, I was looking into conducting research on ethical stress involved in CRNA practice. In my literary review I came across your dissertation research. I felt that it was very well performed and I have decided that I would like to replicate your study with a different sample/setting and a few additions to the demographic survey for an additional comparative analysis.

I will be conducting this replication study in California. If you are familiar with CRNA practice in California, one of the big topics of interest is the recent “Opt-Out” of physician supervision. Since the “Opt-Out’s” inception, a multitude of CRNA’s have ventured out into private practice without supervision. I am interested in studying the differences in CRNA’s working as independent practitioner’s vs supervised CRNA’s moral distress levels. I am also considering adding a qualitative (open-ended) component as recommended in your summary to help elucidate some further meaning from a few of the questions.

I am writing to you in the hopes that you could give me a few “tips” that you may have found beneficial while conducting your research. Do you have any guiding tips about some of the problems or pitfalls (if any) you may have come across at any time during your research process. In retrospect, was their anything in your research design that you would have changed for the better. I noticed you had some issues with the ethics stress...
scale and the appropriate method of calculating total scores and subscale scores. How difficult did this issue make the interpretation of your findings?

I would appreciate any advice you may have. Thank you for your time.

Sincerely,

Michael Dumouchel, CRNA, MSN, DNP-Student
Certified Registered Nurse Anesthetist
APPENDIX B

EMAIL CORRESPONDENCE—DR. JUDITH WILKINSON

Re: Moral Distress Model
From Judith Wilkinson
To Michael Dumouchel

Dear Dr. Dumouchel,

I am pleased to grant you permission to replicate and publish in your doctoral project at Cal State University, any figures, tables, or concepts from my moral distress thesis research. I ask only that you use the standard referencing to credit the content used. I am assuming you are requesting this permission for your doctoral project only. However, I would also grant it for professional journal publications or any other use for which you (or any other associated parties) are not remunerated.

Congratulations on finishing your project and achieving the DNP. You should be very proud of your achievement! I am looking forward to seeing the copy of your final product.

Sincerely,
Judith Wilkinson

Judith Wilkinson-Hiam, Ph.D., ARNP

On Jun 29, 2013, at 7:59 PM, Michael Dumouchel wrote:

Dear Dr. Judith Wilkinson,

I am a current student in a Doctor of Nursing Practice program at Cal State University, Fullerton in California. I am currently working on a replication study of Dr. Linda Radzvin’s dissertation research in which she used your Moral Distress Model as her theoretical framework.

For this replication study, I am interested in exploring the levels of moral distress experienced by Certified Registered Nurse Anesthetists using the Ethics Stress Scale developed by Dr. Raines and Dr. Tymchuk.

I am requesting your permission to use this model in my replication study, so that I may duplicate Dr. Radzvin’s research. If you would be so kind as to grant me permission to use your theoretical model, I may need to send you a personal letter requesting permission and a response that would contain a personal signature. I am uncertain it this will be necessary, it is likely that I can use your response to this email as stating permission.
I look forward to hearing from you regarding this matter. I know you have a very busy schedule and I would like to thank you in advance for taking the time to review this email and provide a response.

Sincerely,

Michael Dumouchel, CRNA, MSN
## APPENDIX C

### TABLE OF EVIDENCE FOR NONEXPERIMENTAL DESCRIPTIVE STUDIES

**Nonexperimental Descriptive Studies**

<table>
<thead>
<tr>
<th>Purpose &amp; Study Questions (Author(s), Year)</th>
<th>Study Design &amp; Key Variables</th>
<th>Sample &amp; Setting</th>
<th>Measurements &amp; Operational Definitions of Variables</th>
<th>Results or Findings</th>
<th>Authors’ Conclusions, Limitations, &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine if CRNAs experience MD in their NPrac.</td>
<td>Prevalence study, descriptive, exploratory.</td>
<td>Random selection by AANA registry, using systematic sampling.</td>
<td>Using alpha .05, effect size .20, power .80 = TSS of 160.</td>
<td>Demographics: 96% White, 68% F, 65% between ages 41 and 60, 58% had master’s, 79% worked in hospital setting, 80% married, 29% worked ≥ 26 years, 32% worked with current employer between 1 and 5 years, 83% FTE.</td>
<td>CRNAs do experience MD, small number at high levels, but more at generally moderate levels of MD. As CRNA age increased, levels of MD decreased (inverse relationship). CRNAs believed they knew ethically correct course of action, but were unable to follow through (p. 42). Experienced frustration, anger, guilt, powerlessness, and physical symptoms (H/A, stomachaches, MT) in response to ethical dilemmas. CRNAs fear loss of job, status, and financial security. CRNAs viewed spouses and significant others as helpful in dealing with ethical issues (p. 43). While not statistically significant, doctoral prepared</td>
</tr>
<tr>
<td>RQ: What levels MD experienced by CRNAs measured by ESS? How do levels of MD correlate with demographics? (Radzvin, 2011).</td>
<td>9-item demographic data questionnaire. ESS—measures moral distress, 56-question instrument total, 52 Likert-type scale (1 = AS to 5 = DS). 6-SS (+/-affective SS, +/-behavioral SS, +/-cognitive SS). CV = verified with 4-option CVI rating scale = 0.89, p &lt; .05. CR via test-retest methods, r = 0.82, p &lt; .005. In this study Cronbach’s alpha = 0.87 (mean = 3.64). FV established by review of ESS by 4 nurse educators.</td>
<td>302 surveys returned (38% RR), 300 used, 293 completed demographics, 283 had complete questionnaires. 68% F, 32% M. Any age. State of Pennsylvania only. IC: CRNA in Pennsylvania. EC: None.</td>
<td>Original ESS was 56 items, 52 of them Likert-type 1-5 scale. Developer died and did not address complete scoring of tool. Lower total scores (10% or less) on ESS = high stress. Significant correlation between all SS scores and total SS scores with exception of behavioral positive SS (p. 41). Age correlated with total ESS, r = .120, p = .05 (p. 41). 38% felt powerless dealing with physicians. 24% felt powerless with physicians and administrators.</td>
<td>CRNAs do experience MD, small number at high levels, but more at generally moderate levels of MD. As CRNA age increased, levels of MD decreased (inverse relationship). CRNAs believed they knew ethically correct course of action, but were unable to follow through (p. 42). Experienced frustration, anger, guilt, powerlessness, and physical symptoms (H/A, stomachaches, MT) in response to ethical dilemmas. CRNAs fear loss of job, status, and financial security. CRNAs viewed spouses and significant others as helpful in dealing with ethical issues (p. 43). While not statistically significant, doctoral prepared</td>
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<td>Purpose &amp; Study Questions (Author(s), Year)</td>
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<td>9% felt powerless with administrators.</td>
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<td>CRNAs had higher levels of MD than diploma, associate degree, bachelor’s degree, and master’s degree levels (p. 43). Younger CRNAs should have greater support to deal with ethical decisions (p. 43). Limitations: CRNAs of Pennsylvania only lack of generalization. Data analysis and interpretation of subscales had no method of calculation of total scores for ESS. Lack of correlation between total ESS scores and behavioral positive subscale appears behavioral positive subscale is not predictive of total MD (p. 43). ESS did not provide a means for elaboration on types of situations leading to MD. No demographics tables notes for easy comparison of information. ESS incomplete information on analysis of data use to instrument developer death.</td>
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<td>2% felt powerless with other nurses (p. 42). 10% CRNAs considered leaving nursing (p. 42). 9% CRNAs thought of changing specialties (p. 42). 20% CRNAs stopped working with patients with ethical dilemmas. 77% CRNAs avoided working with physicians due to ethical issues. 8% avoided or stopped working with both physicians and nurses (p. 42). 30% feared losing job, status, and financial security (p. 42). 21% feared losing job and financial security (p. 42). 17% CRNAs believed their ethical values were compromised in work setting (p. 42).</td>
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Aim: Examine and expand NK Nonexperimental, descriptive, Convenience Theoretical model: (a) negative relationship ANOVA revealed MDS in MICU (4.5) significantly higher Revised theoretical model: (a) negative direct relationship
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<th>Purpose &amp; Study Questions</th>
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<td>and the relationship among MD, EL, CRP, and WE in the ICU (p. 256). Secondary aim: Present proposed theoretical framework of significant correlated work engagement (p. 257). (Lawrence, 2011).</td>
<td>Correlational design. Both quantitative and qualitative aspects (mixed methods).</td>
<td>Sample of 198 ICU RNs (46 MICU, 62 PICU, 90 NICU) from a 355-bed southwestern magnet-designated hospital.</td>
<td>Overall, 2 significant findings: CRP and WE were positively related and MD and WE were negatively related (p. 265). Limitations: Sample nonrandomized, and SS too small according to the PA hinder ability to conclude significance (p. 266). Unstandardized instrument developed by author (CRPQ). Convenience sample from one hospital. Limited ethnic diversity of RN population. This study discussed the fact that multiple previous studies show RNs experience MD more likely to leave a</td>
<td>between MD * WE, (b) positive direct relationship between CRP and WE, (c) MD and CRP together explain a significant 47% of the variance in WE, (d) positive direct relationship between increased EL and CRP in NICU only, and (e) suggested inverse relationship between EL and MD in NICU only which warrants further study (p. 265).</td>
<td>between MD * WE, (b) positive direct relationship between CRP and WE, (c) MD and CRP together explain a significant 47% of the variance in WE, (d) positive direct relationship between increased EL and CRP in NICU only, and (e) suggested inverse relationship between EL and MD in NICU only which warrants further study (p. 265).</td>
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<td>Purpose: Describe MD influence on PPE in CC (p. 221). RQ:</td>
<td>Descriptive, correlational, prospective, survey design study (p. 221).</td>
<td>IRB approval. Performed at major academic medical and level 1 trauma center in the Midwest via roster of staff nurses in CCU (p. 225).</td>
<td>Conceptual model: Aspects of nursing worklife model and moral distress theory by Corley (p. 222). RNs given informational sheets and questionnaires in mailboxes, asked to complete anonymously and return completed form in sealed envelope in dropbox on units (p. 225). 10-minute questionnaire collected over 4-month period (p. 225). MDS is 38-item Likert-</td>
<td>Physicians and patients’ lives are prolonged because physicians see death as defeat (p. 264). Role conflict, moral distress, physical distress, exhaustion, and bonding relationships were common findings (p. 264).</td>
<td>Lack of significant relationship between nursing experience and level of moral distress (p. 227). MD dilemmas that frequently occur are not the situations that cause the greatest level of distress (p. 227). This is also supported by the literature review. Limited evidence that nursing leadership influences MD. Need for greater nursing leadership involvement in MD and NPE (p. 227). MD has negative relationship</td>
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<td>1. What is level of MD in CCS?</td>
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<td>2. What is perception of PPE in CC?</td>
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<td>3. What is relationship of MD to PPE?</td>
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<td>4. What effects does MD have</td>
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- **Purpose & Study Questions (Author(s), Year):**
  - **Study Design & Key Variables:**
    - 261). 10 from MICU, 11 from PICU, and 7 from NICU. 24/28 (85%) Caucasian. 26/27 (96%) F. 16/26 (57%) BSN. 24/28 (86%) fulltime employees. Mean of 8.6 years in ICU (range 1-42, SD = 7.8).
  - **Sample & Setting:**
    -录入问题的工具（p. 262）。UWES, MDS, 和 RRQ 与 Cronbach’s alpha > .83。CRPQ 由研究者和论文指导老师开发并经过试点测试。
    - ANOVA (p. 263)。Content analysis。Hierarchical multiple regression。
  - **Measurements & Operational Definitions of Variables:**
    - ended question for each tool (p. 262)。UWES, MDS, 和 RRQ 与 Cronbach’s alpha > .83。CRPQ 由研究者和论文指导老师开发并经过试点测试。
    - 理解在现实生活中的问题。
  - **Results or Findings:**
    - 医生和患者的生命被延长，因为医生把死亡看作是失败（p. 264）。角色冲突、道德压力、身体压力、筋疲力尽，以及纽带关系是常见发现（p. 264）。
    - 由于无法解决存在的问题，医生可能会辞职，发展不成功的应对机制（p. 266）。
  - **Authors’ Conclusions, Limitations, & Notes:**
    - 缺乏支持性证据显示护理领导对MD有影响。需要更大程度的护理领导参与MD和NPE（p. 227）。MD与道德压力有负相关关系。
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<td>on delivery of nursing care? (McAndrew et al., 2011)</td>
<td>type scale giving examples of moral distress situations; reliability and validity are well established (p. 225). PES of the NWI is 31-item tool measuring environmental structures in 5 distinct areas: leadership and support, participation in hospital affairs, collegial relationships, NM resource and staffing adequacy, and quality of care; reliability and validity well established (p. 225). SPSS version 17. Correlation and multiple regression used (p. 225).</td>
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<td>PES mean was 2.82, $SD = 0.36$, reliability was 0.92. Highest scoring item ($x = 2.96$, $SD = 0.34$) was “patient care assignments that foster continuity of care” (p. 226). Intensity of MD is negatively related to physician/RN collegial relationships, $r = -0.25$, $p = .03$ (p. 226). Frequency of MD statistically significant except for quality of care, $r = -0.12$, $p = .31$ (p. 226). Overall simple linear regression was calculated predicting all aspects of professional practice based on MD. MD when looking at professional practice using PES scores was significant, $R = 0.33$, $R^2 = 0.11$, $R^2_{adj} = 0.09$, $F = 6.91$, $p = .01$ (p. 226). Frequency of MD affected all aspects of PP except foundations for quality of care, $R = 0.12$, $R^2 = 0.01$, $R^2_{adj} = -0.01$, $F = 0.051$, $p = .30$ (p. 226).</td>
<td>with resources and staff adequacy (p. 227). Negative relationship between MD and collegial relationships (p. 227). Meaning that the intensity of MD affected collaborative relationships (p. 228). There was no significant result that would demonstrate that MD affects the quality of nursing care provided (p. 228). Limitations: Convenience sample from one hospital setting and limited sample size where age demographics were not gathered. Pressure to provide socially desirable answers may have occurred even though anonymity was assured. Limited generalizability. Quantitative tools may not capture the range of morally distressing circumstances. No information on degree, significance, or pervasiveness of any of circumstances in scales reported (p. 228). Interestingly, in the literature...</td>
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<td>Identify EI in ANC CRNAs and how disturbed they were by these issues (p. 762).</td>
<td>Descriptive, secondary analysis of cross-sectional survey design study by Harris and Agazio (p. 763).</td>
<td>CRNAs. ANC = 74, DAC = 22. 40% F, 60% M. 92% with MSN or higher. Mean age 42, SD = 6.9.</td>
<td>Instrument: MEIS, 65-item Likert-type questionnaire. Content validity obtained via 3 focus groups (p. 763). EFA with PCA to identify subscales and assess construct validity (p. 764). ICR Cronbach alphas ranged from 0.7398 to 0.9591 (p. 764). Nonparametric data analyzed with frequency and contingency tables (p. 764). Chi-square test used for parametric data to determine significant differences (p. 764). Original Harris and Agazio distributed MEIS via mail survey</td>
<td>Most frequently encountered ethical issues in order: (a) nurse-physician conflicts, (b) staffing patterns/deficiencies, (c) mandatory overtime affecting QOC, (d) caring for patients that put your health at risk (e.g., HIV), and (e) protecting patient’s rights and HD (p. 764). Most personally disturbing ethical issues in order: (a) incompetent/impaired colleagues, (b) conflicts in nurse-physician relationships, (c) unsafe equipment/environmental hazards, and (d) staffing patterns (p. 764). 47% directly involved with ethical issues 1-5 times during the year. 13% stated they never experienced ethical issues.</td>
<td>In this study, the most frequently encountered issue, conflicts in the nurse-physician relationship, ranked higher than the previous research studies had (p. 765). Authors noted perhaps such a narrow sample set was why other studies had more diverse samples. CRNAs described a hostile work environment with both anesthesiologists and surgeons—perhaps due to level of autonomy changes when CRNAs are out of the field where they work independently (p. 767). 70% of CRNAs were aware of ethics committee, 50% knew how to access it, and 1% had used it within the past year (p. 768).</td>
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Purpose: Identify EI in ANC CRNAs and how disturbed they were by these issues (p. 762).

RQ: (a) most frequently encountered ethical issues, (b) ethical issues personally most disturbing, (c) frequency CRNAs directly involved with ethical issues, (d) how handle last direct involvement with ethical
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<td>issues, (e) ethical educational need, (f) how do CRNAs assess knowledge of EI, (g) how rate adequacy of workplace resources, and (h) differences in EI encountered or in need for education based on demographics? (Jenkins, 2006).</td>
<td>questionnaires with cover letter to contact person who distributed questionnaires to all RNs within MF, anonymous, informed consent assumed (p. 764).</td>
<td>3% experience ethical issues on a daily basis (p. 764). Most used informal approach to dealing with ethical dilemmas (i.e., 84.8% asking peers, 54.6% nursing leaders; p. 764). 5.2% consulted hospitals ethics committee (p. 764). 92% viewed themselves as extremely knowledgeable about ethical issues (p. 764). 12% CRNAs felt they had a great need for ethics education (p. 764). 5 potential education topics discovered: (a) ethics of triage, (b) POW healthcare provider conduct, (c) nurse as patient advocate, (d) ethical decision making, and (e) QOL (p. 764).</td>
<td>Limitations: Design was based off of a secondary analysis. Small sample size with limited army personnel (lack of generalizability). Risk of response bias (although questionnaires were meant to be anonymous). Tool was not specifically designed to study CRNAs (p. 769).</td>
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*Note. ANC = Army Nurse Corps, AS = agree strongly, C = content validity, CC = critical care, CCS = critical care setting, CR = content reliability, CRNA = certified registered nurse anesthetist, CRP = critical reflective practice, CRPQ = Critical Reflective Practice Questionnaire, CVI = Content Validity Index, DAC = Department of the Army Civilian, DS = disagree strongly, EC = exclusion criteria, EFA = exploratory factory analysis, EI = ethical issues, EL = education level, ESS = Ethics Stress Scale, F = female, FTE = full time employment, FV = face validity, GC = gift cards, HD = human dignity, H/A = headache, IC = inclusion criteria, ICR = internal consistency reliabilities, IRB = Institutional Review Board, M = male, MD = moral distress, MDS = Moral Distress Scale, MEIS = Modified Ethical Issues Scale, MF = medical facility, MICU = medical intensive care unit, NICU = neonatal intensive care unit, NK = nursing knowledge, NM = nurse managers, NPrac = nursing practice, NPE = nursing practice environment, NWI = Nursing Work Index, PA = power analysis, PES = Practice Environment Scale, PCA = principal-component analysis, PICU = pediatric intensive care unit, POW = prisoner of war, PPE = professional practice environment, QOC = quality of care, RN = registered nurse, RQ = research question, RR = response rate, RRQ = Reflection-Rumination Questionnaire, SA = stomachache, SM = SurveyMonkey, SPSS = Statistical Package for the Social Sciences, SS = subscale, SSZ = sample size, TSS = target sample size, UWES = Utrecht Work Engagement Scale, VC = voluntary consent, WE = work engagement, +/- = positive and negative.*
**APPENDIX D**

**TABLE OF EVIDENCE FOR QUALITATIVE STUDIES**

*Qualitative Studies*

<p>| Aim: Illuminate what it means for CRNAs to be in a PACS concerning older patients. (Mauleon et al., 2005). | BIPM. Qualitative exploratory study. Paradigm cases used to aid in the analysis of individual nurses’ experiences. | 7 CRNAs interviewed. Age 35-55. All F. All FTE. Setting: Large accident and ER care hospital in Sweden. IC: CRNA ≥ 5 years experience and willingness to participate (p. 265). | IRB approval. Information about study presented at 2 meetings by FA. 6 CRNAs attended 1st and 7 on 2nd. 13/15 total CRNAs attended. 2 CRNAs on night shift did not attend. 7 CRNAs agreed and were I&amp;T. In an office each interview lasted 1.5 hours; CRNAs asked to narrate a concrete, self-experienced, PACS (p. 266). 30 narrated case situations achieved with FOS encouraged and minimal probing/interruptions. Narrative reread several times and 2 paradigm cases were selected for | Within the 2 paradigms identified (lived-though examples), 2 main themes emerged: struggling to break through barriers and overcoming the problem and making it possible to care (p. 266). Many narrations showed CRNAs forced into a mental struggle with desire to support and give comfort, but unable to do so (p. 267). Other commonalities included inability to help and to show fairness and respect for patients or to live up to their own personal expectations (p. 267). CRNAs felt bullied leading to sense of MD because they thought others enforced obedience on them (p. 267). Results showed that the mode of improving care was challenged by other professionals with different | MD arises in situations where CRNAs had difficulty carrying out what they thought was best for the patient, which has been described repeatedly in LR (p. 269). MD arose with yielding to a demand considered to be wrong and with failure on the part of others to recognize CRNAs’ professional expertise and authority (p. 269). CRNAs felt like they failed themselves and questioned external directives from other health care professionals and organizations (pp. 269-270). CRNAs felt that they had to suffer personally for the |</p>
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<th>Statement of Problem, Aims, &amp; Research Questions (Author(s), Year)</th>
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<th>Sample &amp; Setting</th>
<th>Data Collection Process, Data Management, &amp; Analysis Process</th>
<th>Results or Findings and Theoretical Integration</th>
<th>Authors’ Conclusions, Limitations, &amp; Notes</th>
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| **RQ:** What are nurses’ perceptions of and responses to MD? (Varcoe et al., 2012). | Quantitative and qualitative survey design to measure degree and frequency of MD and ethical climate of nurses’ work environments (p. 490). Used Corley’s MDS and OHECS with the addition of 3 qualitative open-ended questions (p. 490). | IRB approval. Survey packages distributed after randomly generated list of 1,700 RNs working in ACS in BCC who indicated consent to be contacted for research purposes (p. 490). 374 responded; 292 (78%) were complete. 96% F. Sample similar in data analyzed with ID, which begins with questions arising from practice disciplines (qualitative research approach). NVivo 8—used for data management and coding. Inductively generated list of broad themes. All investigators analyzed responses and then compared, refined, and coded the data further into categories. Each investigator then conducted an in-depth analysis D/T their clear examples of concern, issues, and ways in which CRNAs handle situations in real life. FA transcribed interviews verbatim (p. 266). | Systemic issue themes: (a) workload overload (most common issue recognized) and (b) incompetent self or colleague leading to inadequate care (p. 491). Specific patient themes: (a) witnessing unnecessary suffering, (b) moral compromise, and (c) negative judgments about patients and/or families by staff (p. 491). Personal responses to MD situations were “shocked,” “anxious,” and “emotionally drained” (p. 494). Expressed frustration, anger, overwhelmed sensation, feeling like a “failure,” and fearing “a | Workload overload led to lower QOC and RN anguish and sense of powerlessness (predominantly toward physicians) was reflected in this study just like the literature demonstrated (pp. 491-492). MD negatively impacted quality of care (p. 494). Many RNs felt they compromised care in order to comply with other decisions (p. 493). Overall, RNs in this study reported undertaking considerable actions to...
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<th>Future devastating outcome” (p. 494). 7 RNs explicitly stated they fear legal action for actual or potential incidents (p. 494). RNs stated they began “avoiding patients” to minimize their own MD (p. 494). 20 patients left previous units or opted for early retirement D/T MD. 13 more planned to leave through early retirement, LTD, or transferring to another unit (p. 494). 7 RNs described their work in favorable terms (p. 492). Few felt that MD “motivated me” and “increased my resolve” to act (p. 495). Overwhelmingly, RNs describe multiple, time-consuming actions (phoning, writing, meeting, and emailing) to help resolve MD. 86 RNs approached managers—69/86 to inform them and 17/86 to look for help (p. 495). 10/86 RNs felt approaching managers would be fruitless D/T managers being “ineffective.”</th>
<th>Authors’ Conclusions, Limitations, &amp; Notes Resolve MD issues (p. 498). Limitations: Low response rate for quantitative data portion, yet large and rich data for qualitative part (p. 497). Only those who chose to respond responded; who knows what the other RNs do for MD—biased survey. Both the scales and definition drew attention to institutional obstacles which could have shaped the responses for the 3 open-ended qualitative questions (p. 497). No specific qualitative theory to help guide analysis identified.</th>
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<td>ACS included almost every specialty (p. 490). Age, geographic location, and EP (p. 490). Analysis and compared the coded data to each other multiple times, sharing reflective notes and refining analysis and theme development (increased rigor by challenging own biases and interrator reliability; p. 491).</td>
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<td><strong>Aim:</strong> Explore existence of MD among nurses of LDOM (Maluwa et al., 2012).</td>
<td>Qualitative, exploratory, descriptive research design.</td>
<td>20 F (100%) Malawian nurses (6 RN, 9 EN, 5 NT). Participation voluntary. Signed consent. Explicit consent for interviews to be tape-recorded. Participants coded from 001-020.</td>
<td>IRB of MSU approval. Data collected in November of 2007. Face-to-face in-depth interviews for flexibility (p. 197). Semistructured open-ended data collection instrument interview guide used with gradual and careful probing (p. 198). DA done simultaneously with data collection. AT transcribed verbatim and rechecked against AT once complete (p. 198). Themes identified and grouped into results. Responses directly quoted (p. 198).</td>
<td>5 main themes identified: (a) knowledge and experience, (b) causes of MD, (c) effects of MD, (d) coping mechanisms, and (e) desire for support services (p. 198). 6 subthemes identified: (a) shortage of staff, (b) violating regulations in order to protect patients, (c) being forced to accept disrespect, (d) lack of resources, (e) behavior of colleagues, and (f) mismanagement by superiors (p. 199). All except 1 stated they had experienced MD (p. 198). 12/20 stated they deliberately failed to follow hospital rules in order to protect patients (p. 199). 20/20 stated hospital regulations were in conflict with their responsibilities as nurses (p. 199). “Sometimes you work hard to help patients . . . but you are shouted at by a doctor or a guardian in the presence of the patients, yet they expect that you work normally.”</td>
<td>Overall, nurses in Malawi experience MD regardless of facility; age; WE; IR; CP; and disrespect from peers, managers, guardians, and patients (p. 206). Frustration and burnout were common results (p. 198). Nurses with more experience were resilient to MD and applied CM more effectively (p. 202). Interestingly, nurses were not aware of the MD concept, but once explained, it played a huge role in their lives (p. 203). MD is MC and MHI problem in Malawi. Religion was noted to play a positive role in coping with MD (p. 205). Managers could play major role in MD prevention (p. 205). Limitations: No specified.</td>
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<td>under such situations” (p. 200). 15/20 reported lack of sleep, physical pain (H/A), lack of appetite, sadness, irritation, and anger in dealing with MD (p. 202).</td>
<td>qualitative theory used although likely grounded theory. Specific instrument used not mentioned; was it trustworthy? Not all nurses in this study were RNs. All nurses were from Malawi.</td>
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**Note.** ACS = acute care setting, AT = audiotapes, BCC = British Columbia, Canada, BIPM = Benner’s Interpretive Phenomenological Methodology, CM = coping mechanisms, CP = conflicting policies, CRNA = certified registered nurse anesthetist, DA = data analysis, D/T = due to, EN = enrolled nurses, EP = educational preparation, ER = emergency room, F = female, FA = first author, FOS = freedom of speech, FTE = full time employees, ID = interpretive description, IR = inadequate resources, I&T = interviewed & tape recorded, LTD = long-term disability, LDOM = Lilongwe District of Malawi, LR = literature review, MC = multicultural, MD = moral distress, MHI = Multi-Healthcare Institutional, MDS = Moral Distress Scale, MSU = Michigan State University, NT = nurse technicians, OHECS = Olson’s Hospital Ethical Climate Survey, PACS = problematic anesthesia care situation, PB = professional body, QOC = quality of care, RN = registered nurses.
APPENDIX E

CALIFORNIA STATE UNIVERSITY, FULLERTON IRB APPROVAL

CALIFORNIA STATE UNIVERSITY, FULLERTON
Graduate Programs and Research
P.O. Box 6850 or 800 N. State College Blvd., MH-103, Fullerton, CA 92831 / T 657-278-7640 / F 657-278-7238

APPROVAL NOTICE
From the Institutional Review Board
California State University Fullerton

Date: August 11, 2013

From: Eloise Rukowski, PhD, Vice-Chairperson
CSUF Institutional Review Board

To: Michael Dumouchel
Department: Nursing, EC-190

Re: Use of Human Subjects in Research Project entitled:
Moral distress among certified nurse anesthetists in independent practice versus medically supervised practice

The forms you submitted to this office regarding the use of human subjects in the above-referenced proposal have been reviewed by the Regulatory Compliance Coordinator and the Chair of the California State University Fullerton, Institutional Review Board (CSUF IRB). Your proposal is determined to be exempt per 45 CFR § 46.101(b)(2).

The CSUF IRB has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval notice does not replace any departmental or additional approvals which may be required.

If the above-referenced project has not been completed by August 18, 2014 you must request renewed approval for continuation of the proposal.

It is of utmost importance that you strictly adhere to the guidelines for human participation and that you follow the plan/methodology/procedures described in your research proposal. Any change in protocol or consent form procedure requires resubmission to the CSUF IRB for approval prior to implementation. Additionally, the principal investigator must promptly report, in writing, any unanticipated or adverse events causing risk to research participants or others.

Please be advised that if you are seeking external funding for this proposal, the above-referenced title should match exactly with the title submitted to the funding sponsor. Any change in project title should be submitted to the CSUF IRB prior to implementation.

By copy of this notice, the chairman of your department (and/or co-investigator) is reminded that s/he is responsible for being informed concerning research projects involving human participants in the department, and should review all protocols of such investigations as often as needed to ensure that the project is being conducted in compliance with our institutional policies and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protections. The Assurance Number is FWA00013584.

Cc: Dr. Penny Weismiller
Application No. HSR-13-0295
APPENDIX F
AANA DISSEMINATION OF SURVEY APPROVAL

August 7, 2013

Dear Mr. Dumouchel:

After the applicant meets all of the criteria to disseminate an e-mail survey, the AANA will disseminate the survey on behalf of the researcher. One of the key criteria is IRB approval. The AANA will not disseminate the survey until all AANA criteria is met including evidence of IRB approval by California State University, Fullerton. The respondent’s identity will remain anonymous. The research results will be reported to the researcher, and all responses are de-identified.

Sincerely,

Lorraine Jordan, CRNA, PhD, FAAN
AANA Senior Director of Research and AANA Foundation Executive Director

Advancing the Science of Anesthesia through Education and Research
APPENDIX G
MORAL DISTRESS IN CERTIFIED REGISTERED NURSE ANESTHETIST STUDY—DEMOGRAPHICS DATA SURVEY

Please complete the following questions about yourself.

1. Age:  
   - 24-30  
   - 31-40  
   - 41-50  
   - 51-60  
   - 61 and over

2. Ethnicity:  
   - African American  
   - Asian  
   - Hispanic  
   - Caucasian  
   - Other

3. Marital status:  
   - Single  
   - Married  
   - Divorced  
   - Widowed  
   - Separated

4. Gender:  
   - Male  
   - Female

5. Highest Educational Level:  
   - Diploma  
   - Associate Degree  
   - BS/BSN  
   - MS/MSN  
   - Doctorate

6. Current place of employment:  
   - Hospital  
   - Clinic/Office  
   - Ambulatory Surgery Center  
   - Other

7. Length of employment with current employer:  
   - less than 1 year  
   - 1-5 years  
   - 6-10 years  
   - 11-15 years  
   - 16-20 years  
   - 21-25 years  
   - 26 years or more
8. Numbers of years as a CRNA:  
   ________less than 1 year  
   ________1-5 years  
   ________6-10 years  
   ________11-15 years  
   ________16-20 years  
   ________21-25 years  
   ________26 years or more

9. Employment status:  
   ________Full-time  
   ________Part-time  
   ________Casual  
   ________Unemployed

10. Practice Setting (Note: If you have two or more jobs and one of which is working independently without supervision, please fill out the Ethics Stress Scale to follow from your perspective as working independently and not under physician supervision):  
    ________Medically Supervised  
    ________Independent Practice (Unsupervised by medical doctor, dentist, or the like)  
    ________Work at multiple sites with varying levels of Practice (independent and supervised)(note: if selecting this option, please answer questions as if only working in independent practice)
APPENDIX H

ETHICS STRESS SCALE

CODE: C +/- Cognitive Subscale; B+/- Behavioral Subscale; A+/- Affective Subscale
© 1992 ML Raines & A Tymchuk

Please consider each of the statements below as it relates to the last year. Place a number from the scale below in the space at the left which most closely corresponds to how you feel about each statement. Thank you


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STATEMENTS

1) C _ I have thought about leaving nursing because of the ethical issues/dilemmas I face.

2) A _ I worry that I handle ethical issues inappropriately.

3) A _ I feel more stressed when dealing with some ethical issues that with others.

4) C+ _ I believe I have handled most ethical issues in my practice appropriately.

5) C _ I think other people interfere with my being able to implement/follow through on my decisions related to ethical problems.

6) A+ _ I feel confident that I can justify my decisions regarding ethical issues.

7) C+ _ I think maintaining professional relationships is important in dealing with ethical issues effectively.

8) C+ _ I think the setting in which I work influences my ethical decisionmaking in a positive manner.

9) A _ I feel frustrated or angry when I cannot resolve an ethical issue.

10) C+ _ I have adequate consultation resources and social support regarding the ethical issues I face.

11) A _ I feel fatigued when I have to deal with ethical dilemmas/problems.

12) B+ _ I have modified some of my clinical decisions regarding patient(s) because of ethical issues.
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13) _C--_ I think my job is more difficult than it used to be because of ethical issues.

14) _C--_ I think I would be less stressed if there were fewer ethical problems to deal with.

15) _B+__ I have decided to stop working with a patient(s)/family or asked for a change of assignment because of the ethical issues involved.

16) _A--_ I feel dissatisfied about ethical decisions I have made/not made in my work.

17) _A--_ I often feel uneasy/uncomfortable about following through/implementing my ethical decisions.

18) _C+__ I think I can identify ethical issues found in my professional practice.

19) _C--_ I have thought about changing my nursing specialty/work setting due to problems with ethical issues.

20) _A+__ I never feel frustrated or angry over the way ethical issues are handled in my institution.

21) _C+__ I tend to recognize ethical issues before my colleagues do.

22) _C+__ I think general ethical principles (i.e. beneficence, justice, patient autonomy) are sufficient as guidelines for dealing with ethical issues I face.

23) _A--_ I sometimes feel overwhelmed by having to make ethical decisions.

24) _A--_ I sometimes feel powerless/like I have little influence in dealing with others about ethical issues.

Please specify the profession or institutional position of these others (e.g. physicians, nurses, psychologists, administrators, lawyers, etc)________

25) _A--_ I feel alone in resolving the ethical dilemmas/issues in my work/practice.

26) _A--_ I worry about losing my job/ status/ financial security (circle which apply to you) due to the decisions I make regarding ethical issues.
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27) _A+_ I feel confident about my professional responsibilities and scope of practice related to ethical issues.

28) _A-_ I feel guilty about the way I have responded to some ethical issues.

29) _B+_ I use an ethical decision-making model or other systematic problem-solving method when dealing with ethical issues.

30) _A+_ I never fear being sued/reprimanded for my decisions related to ethical issues.

31) _A+_ I feel prepared to deal with the ethical issues I face.

32) _C+_ I believe there are some ethical issues I can do nothing about.

33) _B-_ I try to avoid becoming involved with ethical issues because it is stressful to me.

34) _A+_ I feel good about dealing with the ethical issues in my work.

35) _C+_ I believe I do everything I need to/should do regarding ethical issues related to my work.

36) _C+_ I could be more influential in resolving ethical issues if I had more administrative power.

37) _C+_ I know others I respect/support my decisions about ethical issues.

38) _B+_ I frequently discuss ethical issues with colleagues and friends.

39) _C+_ I think I am more concerned about ethical issues than others in my profession.

40) _C+_ I believe most of my colleagues think the way I do about ethical issues in our practice.

41) _A+_ I feel calm when I handle ethical issues.

42) _B-_ I tend to avoid dealing with ethical issues.

43) _C+_ I do not think that my ethical values are compromised in my work setting.
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44) **_A-_** I get upset when I see others avoiding ethical issues.

45) **_C+_** I think Ethics Committees can be very helpful to me when I am facing an ethical dilemma.

46) **_B-_** I have avoided working with or stopped working with a nurse, physician, or other professional (please specify which________________________) because of the ethical issues involved.

47) **_A-_** I sometimes experience somatic symptoms (i.e. headaches, stomach aches, tension in neck or shoulders) when I have to deal with ethical issues.

48) **_C-_** I think most ethical dilemmas/issues are too complex for me to resolve, so I don’t even try to resolve them.

49) **_C+_** My religious beliefs help me to cope with ethical issues.

50) **_B-_** My ethical decisions have been greatly influenced by the communications media (e.g. television, newspaper).

51) **_C-_** Thinking about legal constraints, such as legislative and judicially mandated behaviors, cause me to make decisions I would not otherwise make.

52) **_A-_** I often feel “rushed” or “in a hurry” to make decisions regarding ethical problems.
APPENDIX I

EMAIL CORRESPONDENCE—DR. TYMCHUK

RE: Ethics Stress Scale
From Alexander Tymchuk
To Michael Dumouchel

hello- good for you in pursuing this topic-there are a number of future studies including doing an intervention study to see if ethics stress in nurses will be reduced as a result-and I am sure that Marcia would have been pleased as well. She was my doctoral student in clinical psychology and together we were able to do a number of things one of which was to create the ESS.

She was such a delight to work with and since we were in the School of Medicine together, we would discuss some difficult decisions as well. of course I give you permission to use the ESS as Marcia would have liked it as well.

It was a shock to me that she passed away so early in life. Contact me as needed and I would be happy to assist in any way that I am able.

with best wishes,
Dr. Alexander J. Tymchuk
Emeritus Professor
Department of Psychiatry
School of Medicine
University of California-Los Angeles

> Date: Sat, 29 Jun 2013 18:16:51 -0700
> Subject: Ethics Stress Scale
> Dear Dr. Tymchuk,
> I am a current student in a Doctor of Nursing Practice program at Cal State University, Fullerton in California. I am currently working on a replication study of Dr. Linda Radzvin’s dissertation research in which she used your instrument, the Ethics Stress Scale.
> For this replication study, I am interested in exploring the levels of moral distress experienced by Certified Registered Nurse Anesthetists using the Ethics Stress Scale.
> I am requesting your permission to use this instrument in my replication study, so that I may duplicate Dr. Radzvin’s research. If you would be so kind as to grant me permission to use your theoretical model, I may need to send you a personal letter requesting permission and a response that would contain a personal signature. I am
uncertain if this will be necessary, it is likely that I can use your response to this email as stating permission.
> I understand that Dr. Raines has passed away and hence, I can’t obtain consent from her. I am saddened to hear of her passing and hope the use of this instrument can be some sort of tribute her life, as well as your own.
> I look forward to hearing from you regarding this matter. I know you have a very busy schedule and I would like to thank you in advance for taking the time to review this email and provide a response.
> Sincerely,
> Michael Dumouchel, CRNA, MSN
APPENDIX J

MANUSCRIPT SUBMITTED TO AANA JOURNAL

MORAL DISTRESS AMONG CERTIFIED REGISTERED NURSE ANESTHETISTS
IN INDEPENDENT PRACTICE VERSUS MEDICALLY SUPERVISED PRACTICE

By

Primary Author: Michael Dumouchel, DNP, CRNA. Currently works as a Certified
Registered Nurse Anesthetist for Kaiser Permanente in Fontana, California, USA.
Email: Mikedumouchel@yahoo.com.

Co-Author: Michael Boytim, EdD, CRNA. Currently works as the assistant director for
the Kaiser Permanente School of Nurse Anesthesia located in Pasadena,
California, USA. Email: michaelboytim@aol.com.

Co-Author: Penny Weismuller, DrPH, RN, Director, Southern California CSU DNP
Consortium, Fullerton, CA, USA. Email: pweismuller@exchange.fullerton.edu.

Address:
Michael Dumouchel Email: Mikedumouchel@yahoo.com
321 Highland Oaks Lane Cell: 760-415-3809
Fallbrook, CA, 92028

Disclosure of financial support and/or grants: None for this study

Biography Statement:

Michael Dumouchel was born and raised in San Diego, California. He achieved his BSN
from San Diego State University and went on to achieve his Master of Science and
Doctor of Nursing Practice at California State University, Fullerton. He attended the
Kaiser Permanente School of Nurse Anesthesia program to achieve his CRNA
certification. He lives in Fallbrook California, with his wife Shamyne and his daughter
Sara and currently works as a CRNA for Kaiser Permanente.
Abstract

The purpose of this exploratory, descriptive study was to determine if there is any difference in moral distress levels between certified registered nurse anesthetists (CRNAs) working in medically supervised practice versus independent practice. The California CRNA population (1,190) was administered a 63-question survey, yielding demographic, quantitative, and qualitative data for 175 respondents. Quantitative data were analyzed using the Statistical Package for Social Sciences (SPSS) 22.0. An independent samples t test suggested that medically supervised CRNAs had higher moral distress scores (176.8) versus independent practice CRNAs (187.8; \( p = .002 \)). A chi-square analysis revealed that CRNAs in independent practice generally were male \( (p = .016) \) and worked in ambulatory surgery centers \( (p < .001) \). Independent practice CRNAs demonstrated lower moral distress scores versus supervised CRNAs who typically scored within the moderate distress range \( (p = .034) \). A conventional content analysis of the qualitative data showed CRNAs experienced moral distress when: pressured to give anesthesia to unoptimized patients, differences of opinion regarding anesthetic plans occurred, dealing with end-of-life issues, working with incompetent providers, and during interprofessional struggles between CRNAs and anesthesiologists. Implications for practice suggest increased administrative support, increased communication and reciprocated collegial respect between anesthesiologists and CRNAs, and ethics committee representation.

Key Words
Moral Distress; Ethics; Anesthesia; Independent Practice; Medical Supervision
Introduction

Certified registered nurse anesthetists (CRNAs) have been practicing anesthesia for over 150 years and were considered the first advanced practice nursing specialty.\(^1\) Over 45,000 CRNAs actively practice anesthesia nationwide, with 1,190 practicing in California. Since 2009, when independent practice was authorized by the state legislature, CRNAs in California have been able to administer anesthesia with varying levels of supervision. These range from medically directed practice to complete independence without physician supervision.

Moral distress is defined as pain or anguish in relation to circumstances where an individual understands and is aware of a moral dilemma but due to perceived constraints acts in a manner that is morally wrong even though he or she acknowledges what is morally right.\(^2\) Moral distress can profoundly affect not only the mind but the body as well, providing a sense of despair, disequilibrium, and even hostility in the work environment that can compromise patient care and nurse satisfaction.\(^3\) Due to this threat to patient care, moral distress is critically important especially for CRNAs who provide a service that requires optimal conditions both mentally and physically in order to perform their jobs safely.

There are many studies that address moral distress in nursing practice, but only three that specifically address moral distress among CRNAs.\(^4,5,6\) None of these studies compared the type of practice (independent versus supervised and medically directed) and its effect on CRNA moral distress. Radzvin’s\(^5\) study on CRNAs and moral distress found that CRNAs do experience moral distress, with a small number at high levels and most at moderate levels of moral distress. In this study, age and levels of moral distress were found to have an inverse relationship. As CRNAs age, their levels of moral distress
decrease. The reason for this is unclear. It is possible that with greater levels of experience, CRNAs have developed coping mechanisms that allow them to experience less moral distress. It is also possible that CRNAs become jaded as they are constantly being bombarded with moral dilemmas. It could also simply be that having less knowledge and experience leads to greater levels of moral distress.

Radzvin’s as well as Mauleon and colleagues’ research suggested CRNAs experienced frustration, anger, guilt, helplessness, despair, powerlessness, and physical symptoms (headaches and stomachaches) in response to ethical dilemmas. Also noted was a fear of losing one’s job, status, and financial security. De Veer and colleagues found a moderate negative correlation between job satisfaction and moral distress. Registered nurses (RNs) who were less satisfied with their jobs had higher levels of moral distress ($r = -0.34$).

Other studies among RNs did not find the linkage between moral distress and professional experience. McAndrew and colleagues concluded that there is no significant effect between nursing experience and level of moral distress. Of the research conducted on RNs (not CRNAs), it appeared the most common reason for moral distress was caring for patients at the end of their lives rather than length of nursing experience.

According to one qualitative study, CRNAs felt like they failed themselves and questioned external directives from other health care professionals and organizations when ethical dilemmas arose. CRNAs indicated that they had to suffer personally for the judgments they made even when correct. Maluwa and colleagues found that frustration and burnout were common results of moral distress among CRNAs. Another study
showed that CRNAs reported conflicts with surgeons and anesthesiologists regarding the best anesthetic plan.6

In a qualitative study by Atashzadeh and colleagues,11 four main themes emerged when uncovering the reasons behind moral distress in nonadvanced practice nurses. These four themes were: (a) institutional barriers and constraints; (b) communication problems; (c) futile actions, malpractice, and medical/care errors; and (d) inappropriate allocation of responsibilities, resources, and care worker competencies. One participant in the study stated, “When I want to protest to management that something is wasteful or that it affects patient care, I am ignored. It will reflect on my work, and I will lose my job” (p. 472).11

Taking all of this information into consideration, it is clear that CRNAs experience moral distress, but it may be dissimilar from that experienced by other advanced practice nurses (APNs) or by RNs not in advanced practice. Further research is necessary to understand the differences in moral distress between CRNAs in independent practice and CRNAs in physician anesthesiologist medically supervised practice.

Materials and Methods

Design. This descriptive, exploratory study used a survey design that incorporated the Ethics Stress Scale (ESS) originally developed by Raines12 (and Tymchuk) and a demographics survey. The demographics survey gathered data concerning age; ethnicity; marital status; gender; highest educational degree; current employment setting; employment status; years of practice as a CRNA; years with current employers; and current practice as supervised, independent, or a combination of both at multiples worksites.
Ethics Stress Scale (ESS). The ESS was originally developed and used by Raines\(^\text{12}\) (and Tymchuk) in their 1994 study on RNs and the effect their ethical decisions had on them. To date, no tool has been developed specifically for APNs and, hence, this tool is used as a surrogate until further research on APNs reveals a more specific tool. The ESS is a self-administered 56-question instrument with Likert-type responses for the first 52 questions and variable types of responses for the last four questions. Most of the first 52 questions are rated on a scale of 1 (strongly agree) to 5 (strongly disagree). Questions 53-56 are designed to elaborate on the information gathered within the first 52 questions. Some of questions involved circling all that apply. Another involved specifying a specific profession or institutional position that causes increased moral distress and nurse avoidance. Other questions involved ranking questions. These questions were not used due to the response sets that differed from the Likert-scale responses.

Content validity was established with the use of a 4-option Content Validity Index (CVI) rating scale (Raines, 1994) by a group of APNs who were exposed regularly to ethical dilemmas. The CVI was calculated to be 0.89, \(p < 0.05\). Content reliability was established using test-retest methodology, with a coefficient of \(r = 0.82, p < 0.005\). Cronbach’s alpha was 0.87.

Sample. The sample for this study was obtained from the American Association of Nurse Anesthetists (AANA) registry and included active members who were certified and recertified registered nurse anesthetists residing in California. Students and graduate registered nurse anesthetists were excluded from the sample. The ESS asked participants to consider each question in relation to their work environment within the last year;
students and recent graduate nurse anesthetists would not have attained this experience. In order to obtain a substantial sample, the survey was mailed to all 1,190 certified and recertified registered nurse anesthetists in California.

**Data collection.** This study was approved by the California State University, Fullerton, Institutional Review Board to assure human research subject protection. The AANA mailed a survey package to CRNAs in California. Included in the electronic survey package was: (a) a cover letter with implied consent, (b) the demographics survey, and (c) the ESS. To improve the response rates, a follow-up reminder was emailed 2 weeks later to each of the CRNAs who were sent the original electronic survey.

**Quantitative analysis plan.** The ESS and demographic variables were analyzed using chi-square goodness of fit. An independent samples t test was conducted to see if there were any differences in total ESS scores between CRNAs in independent practice and CRNAs in medically supervised practice.

**Qualitative analysis plan.** To help substantiate the findings of the ESS, one additional open-ended question was asked of participants in which they were asked to provide examples of concepts or incidences that cause moral distress in their practice as a CRNA. The respondents were free to write as much or as little as they preferred. Conventional content analysis was used to pull themes from the participants’ responses.

**Results**

Out of 1,190 surveys distributed to the CRNAs throughout California, 207 responses were received: 113 from medically supervised practice, 60 from independent practice, and 23 practicing at multiple sites (both supervised and unsupervised). Thirty-two participants skipped greater than 10% of survey questions; hence, these were excluded from the analyses. This left 175 viable surveys; 18 respondents had some
missing demographic and ESS data (less than six questions skipped) and were included in the overall analysis. However, analyses involving total ESS scores only included those with complete ESS scores \((n = 157)\). The overall response rate for this sample was 14.7%.

**Sample description.** When comparing demographics for respondents by practice type, there were no statistically significant differences in terms of age, ethnicity, marital status, education, length of employment, employment status, and years as a CRNA. However, there were statistically significant differences in terms of gender and practice location, with 53.6% of males in independent practice as compared to 35.9% of female respondents. In supervised practice, 64.1% of respondents were female, while 46.4% were male \((p = .016)\). Between both groups, the majority of respondents in independent \((n = 50, 35.7\%)\) and medically supervised \((n = 90, 64.3\%)\) practices worked in hospitals. However, more CRNAs working in independent practice were employed at ambulatory surgery centers, while more CRNAs in medical supervised practice were employed by hospitals \((p < .001)\). Of the total sample, only a minority worked in multiple practice settings.

**Quantitative results.** One hundred and seventy-five participants had complete or nearly completed surveys used for demographic comparison. However, only participants \((n = 157)\) with complete ESS data were used for any analyses utilizing the total ESS scores. The original creators of the ESS did not address the method used to calculate the total ESS scores. Radzwin’s\(^{13}\) dissertation study demonstrated a range of total ESS scores from a minimum of 130 to a maximum of 238, with a median score of 188. Lower ESS scores indicate higher levels of moral distress. Scores of 161 or below indicate high
moral distress, scores between 162 and 188 (the median) indicate moderate moral distress, and scores above 189 indicate low levels of moral distress.\(^{13}\)

In this study, total ESS scores ranged from a low score of 117 to a high score of 232. Both of these numbers were lower than the range demonstrated in Radzvin’s\(^{13}\) research, indicating an overall higher level of moral distress. The mean ESS score was 181.3, with a median of 182.0, indicating no significant outliers within the data gathered. Of note, both of these numbers were less than the median (188) identified in Radzvin’s\(^{13}\) dissertation research, validating an overall higher level of moral distress in the California CRNA population as compared to Radzvin’s\(^{13}\) Pennsylvania sample. The standard deviation in the California sample was 22.9.

Table 1 displays demographic variables based on ESS scores. A chi-square analysis was used and demonstrated no significant differences between ESS scores and demographics except for marital status and practice setting. Unmarried CRNAs were more likely to report high levels of moral distress in their practice versus those who were married or divorced/separated/widowed \((p = .022)\). Of note, the high proportion of high distress reported by single CRNAs may be a result of their overall low reporting of low distress.

CRNAs in supervised practice showed an overall higher level of moral distress \((p = .034)\). Nineteen CRNAs in supervised practice displayed high levels of moral distress, while, conversely, only 11 in independent practice or working at multiple sites with multiple levels of practice displayed high levels of moral distress. Almost 48.9\% \((n = 43)\) of the participants in supervised practice had moderate moral distress scores, while 35.3\%
(n = 24) of participants in independent practice or working at multiple sites with multiple levels of practice had moderate moral distress scores.

An independent samples t test revealed, among this sample of 156 CRNAs in California, there was a statistically significant difference in the mean moral distress scores of medically supervised CRNAs (176.8) and independent practice CRNAs (187.8), \( t_{(154)} = 3.10, p = .002 \). This indicates that medically supervised CRNAs had a higher level of moral distress than those in independent practice, although both scores still ranked in the moderate distress range.

**Qualitative results.** Participants were asked to give an example of a situation that caused ethical or moral distress in their CRNA practice. Sixty five (37.1%) of the 175 respondents provided examples. Table 2 displays themes identified through conventional content analysis and their percentages among respondents in supervised and independent practices.

**Lack of optimization.** The strongest and most pervasive theme was CRNAs being pressured to give anesthesia to patients who are not appropriately optimized (by anesthesiologists, surgeons, and even patients; \( n = 22, 33.8\% \)). A quotation illustrating this theme is:

“I am frequently pressured to [administer] anesthesia on patients that I have classified as too sick [for outpatient surgery]. I am chastised for cancelling cases and then pressured by physicians to do their case.”

A related theme noted was when other providers manipulated the CRNAs anesthetic plan and management technique to what the CRNA deemed as less than optimal (\( n = 18, 27.7\% \)).
End-of-life care. CRNAs reported feeling distress when providing seemingly unnecessary surgeries to prolong a patient’s already poor quality of life (n = 14, 21.5%). This theme had the greatest number of strong examples accompanying it. The most powerful of these examples is:

“It is so frustrating to wipe out the supply of blood in the community on the 90 year old ruptured AAA only to struggle to find blood an hour later for a post-partum hemorrhage.”

CRNA/MD dynamics. CRNAs discussed the frustration they felt about the double standard held between themselves being APNs versus anesthesiologists being physicians. This theme was pervasive (n = 9, 13.8%), with multiple comments suggesting that CRNAs and their education are devalued by anesthesiologists, reflecting an overall lack of collegial respect. In the following quote, one participant stated a negative experience relating to this theme.

“When the anesthesiologist intentionally tries to devalue the CRNAs practice and not treat them as colleagues.”

Similarly, CRNAs discussed that physicians appear to be able to make mistakes and not be held accountable for them and that CRNAs are used as the scapegoats. Comments from participants included:

“I’ve also seen many CRNA’s thrown under the bus for collective decisions that resulted in poor outcomes.”

“Dealing with anesthesia practitioners whose quality of care is suspect and who seem to be immune from leadership sanctions/terminations.”
“I feel as if my job is on the line because of my reporting these issues and others.”

**Differential care based on ability to pay.** Others complained of distress seen in relation to monetary incentives ($n = 2, 3.1\%$). Patients who have the ability to pay more receive better care. One participant noted that he or she has experienced seeing patients with insurance offered laparoscopic procedures versus those who do not have insurance receiving only nonlaparoscopic surgeries. The medical decisions are being based upon the insurance company’s ability to pay.

**Coworker incompetence.** The theme with the most strongly worded comments regarding moral distress was related to coworker incompetence and lying ($n = 12, 18.5\%$).

“Working with others (physicians, nurses, and other staff) who practice unsafe or unethical behavior towards patients (physicians who do cases they are not able to do safely or intelligently, poor sterile techniques).”

“Most of my moral distress is around working with “supervising” attending’s who try to cover up bad judgments.”

**Aftermath of High Moral Distress.** One participant discussed that his or her moral distress levels were so high that the CRNA left the profession.

“I feel so powerless and unable to truly advocate for my patient's welfare that I've returned to school full time for an NP certificate. The salary I make as a CRNA isn't worth compromising my personal values and I'm looking forward to a career transition that is more aligned with my personal belief system.”
Limitations. Survey design studies have some inherent reliability concerns simply because some questions and their options for answers could be interpreted differently by different respondents. This should be minimized with this survey due to the high reliability and validity index as noted previously. The ESS ranges for high, moderate, and low moral distress were defined by Radzvin\textsuperscript{13} and may require further refinement in the future to get a truer representation or ranges reflecting moral distress levels. Another limitation of this study is that the sample was only taken from the state of California, so this limits the generalizability of the study. The study title itself inherently denotes some bias. It is possible that simply letting the participants know that the study was exploring differences between types of practices and levels of moral distress had some effect on the way they answered the questions. Qualitative comments gathered are relatively brief narrations of situations that lack contextual richness.

Discussion

Overall, this study suggests that CRNAs do experience moral distress in their clinical practice, whether working in independent practice or supervised practice. The majority of CRNAs in this study experienced moderate levels of moral distress in their practice. Although there were relationships between two variables (marital status and practice setting) and the total moral distress scores, this study did not validate Radzvin’s\textsuperscript{5} findings regarding moral distress and age. However, there did appear to be some relationship between being single and having a higher level of moral distress. The reason for this is likely multifactorial. The sample of single CRNAs was relatively small compared to the sample of married CRNAs and so perhaps a larger sample would yield different results.
The study does suggest that there is a significant difference in moral distress levels among independent versus medically supervised CRNAs. Those who work in independent practice do experience less moral distress as compared to those who work under supervision by an anesthesiologist. Once again, the reasons for this could be multifactorial. One reason is likely the practice setting. Among respondents in this study, more independent practice CRNAs worked for ambulatory surgery centers, while more supervised CRNAs worked at hospitals or medical centers. It is likely that those CRNAs working at larger facilities with sicker patients have higher levels of moral distress. This is a potential explanation of why CRNAs who are medically supervised have higher levels of moral distress. However, contrastingly, the qualitative data when analyzed does show that more independent practice CRNAs ($n = 9, 26.5\%$) have concerns regarding end-of-life surgeries and ethical dilemmas than do supervised CRNAs ($n = 5, 16.1\%$). This may be due to supervised CRNAs relinquishing ethical responsibility by allowing the physician anesthesiologist to determine the appropriate course of action. An alternate explanation is that independent practice CRNAs have a higher level of autonomy, allowing them practice to their personal standards regardless of collegial discontent.

In the qualitative study by Atashzadeh and colleagues,$^{11}$ they described four main themes when uncovering the reasons behind moral distress in non-APNs. These four themes were: (a) institutional barriers and constraints; (b) communication problems; (c) futile actions, malpractice, and medical/care errors; and (d) inappropriate allocation of responsibilities, resources, and care worker competencies. Themes one, three, and four were described by the nurse anesthetists responding in this study, showing similar moral distress themes between CRNAs and RNs.
Another study by Jenkins⁶ echoed what was found in this study. The first and second most disturbing ethical issues for CRNAs were working with incompetent or impaired colleagues and prolonging the dying process, respectively. CRNA-physician conflicts ranked as the sixth most disturbing. Another qualitative study on RNs demonstrated similar findings in that unnecessary patient suffering and incompetent colleagues were among the largest themes generated.¹⁴ Furthermore, another study on RNs showed similar themes such as quality at the end of life, substandard healthcare, making decisions for vulnerable patients (i.e., consent issues), and communication breakdown for nurses who wished to report ethical concerns.¹⁵

Many CRNAs in this study reported that their jobs might be in jeopardy for reporting issues with their coworkers. This is similar to the findings by Mauleon and colleagues⁴ and Maluwa and colleagues³ whereby CRNAs felt they had to suffer personally by being mistreated by colleagues and supervisors for the judgments they made even when correct. This sense of suffering and vulnerability resulted in frustration and burnout.

**Implications for practice.** The primary implications for practice involve minimizing the moral distress levels of CRNAs in both the supervised and independent practice settings. As discussed, CRNAs in both types of practices demonstrated a higher level of moral distress than CRNAs in Pennsylvania in Radzvin’s⁵ research. It may be impossible to completely extinguish ethical dilemmas, but perhaps this research will help us learn more about the reasons behind CRNA moral distress. Lowering moral distress by providing a therapeutic environment should increase one’s sense of self and overall professional well-being by reducing burnout.³,⁹,¹⁶ Educating CRNAs and their leaders on
moral distress may help increase situational awareness, allowing for proactive interventions.⁹

As part of the therapeutic work environment, this study suggests further support of CRNA practice is needed from administrators. CRNAs felt there was a double standard held by administration and that they should be held to the same standards as other medical professionals, not a higher one. It has been suggested that if CRNAs perceive a greater level of support from colleagues of all levels (administration, supervising anesthesiologists, surgeons, etc.) in terms of ethical decision making, then perhaps moral distress can be decreased.⁵,¹⁴,¹⁷ In return, CRNAs should offer the same support to their colleagues as well so that all members of the healthcare team can continue grow and improve the quality of patient care by decreasing mental anguish. This concept is known as true collaboration, whereby the unique qualities, knowledge, and abilities of each professional are respected so as to maintain safe and quality care for patients.⁹

In addition to a therapeutic work environment, some research demonstrates spousal support as a strong alleviator of anguish over ethical dilemmas.¹³ Another practice issue involves CRNAs being assertive in nature when it comes to opening a dialogue in regard to morally distressing issues.⁵,¹⁵ Improvements in communication skills may help improve collegial relationships and allow for a greater level of discussion regarding morally distressing issues and their effects on CRNAs and other providers or colleagues. Building team cohesiveness that focuses on patient-centered treatment may also be of benefit.¹⁵ The creation of an ethical climate involving ethics committees may
be useful by validating CRNA reasons for moral distress and looking for ways to reduce its occurrence.\textsuperscript{3,14,15,16}

Several studies suggested that educational and departmental in-service programs discussing ethics may foster a greater level of dialogue between CRNAs and physicians.\textsuperscript{5,15} This, in turn, may increase CRNA support systems, which may reduce levels of moral distress. Overall, CRNAs need to improve their communication, collaboration, and advocating capabilities.\textsuperscript{15} CRNAs and other healthcare providers are particularly vulnerable to moral distress in high-risk situations (like end-of-life surgeries) and need more ethics education and managerial support.\textsuperscript{15}

The implications of this study suggest continuing to research moral distress and its complexity in order to determine methods to help alleviate its manifestation. This phenomenon is pervasive among not only CRNAs but non-APNs as well. It is unknown whether or not other types of APNs experience similar forms of mental anguish or not.

\textbf{Conclusion.} In conclusion, much of the results of this research study correlated with previous findings regarding moral distress. CRNAs do experience moral distress and in many cases it is not dissimilar from the issues causing moral distress for non-APNs. Moral distress is a critically important concept, especially for CRNAs who provide a service that requires optimal conditions both mentally and physically in order to perform their jobs safely. Further research is necessary, especially when trying to identify resources that could help alleviate the moral distress of CRNAs. When morally distressing issues do arise, CRNAs need to know what the best route to alleviate their mental anguish is and how to go about achieving it.
References


17. Bell J, Breslin J. Healthcare provider moral distress as a leadership challenge.

Table 1

*Moral Distress Scores by Sample Demographic Characteristics*

<table>
<thead>
<tr>
<th>ESS Total Score</th>
<th>Low Distress (≥ 189)</th>
<th>Moderate Distress (188-162)</th>
<th>High Distress (&lt; 161)</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
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<tr>
<td>Male</td>
<td>28 (45.2%)</td>
<td>25 (40.3%)</td>
<td>9 (14.5%)</td>
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<td>Female</td>
<td>31 (32.6%)</td>
<td>42 (44.2%)</td>
<td>22 (23.2%)</td>
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<td>Age</td>
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<td></td>
<td></td>
<td>.227</td>
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<tr>
<td>24-30</td>
<td>4 (33.3%)</td>
<td>7 (58.3%)</td>
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<tr>
<td>31-40</td>
<td>10 (25.0%)</td>
<td>19 (47.5%)</td>
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<tr>
<td>41-50</td>
<td>16 (41.0%)</td>
<td>16 (41.0%)</td>
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<tr>
<td>51-60</td>
<td>17 (37.0%)</td>
<td>18 (39.1%)</td>
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<tr>
<td>61+</td>
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<tr>
<td>Asian</td>
<td>6 (30.0%)</td>
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<td>6 (30.0%)</td>
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<tr>
<td>Caucasian</td>
<td>49 (39.2%)</td>
<td>51 (40.8%)</td>
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<td>Hispanic</td>
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<tr>
<td>Other</td>
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<td>6 (100.0%)</td>
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<td>Marital Status</td>
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<tr>
<td>Single</td>
<td>5 (19.2%)</td>
<td>12 (46.2%)</td>
<td>9 (34.6%)</td>
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<td>Married</td>
<td>48 (43.2%)</td>
<td>48 (43.2%)</td>
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<td>Divorced/Separated/Widowed</td>
<td>6 (30.0%)</td>
<td>7 (35.0%)</td>
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<td>Educationa</td>
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<td>BS/BSN</td>
<td>4 (40.0%)</td>
<td>5 (50.0%)</td>
<td>1 (10.0%)</td>
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<tr>
<td>MS/MSN</td>
<td>47 (37.3%)</td>
<td>53 (42.1%)</td>
<td>26 (20.6%)</td>
<td></td>
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<tr>
<td>Doctorate</td>
<td>5 (35.7%)</td>
<td>7 (50.0%)</td>
<td>2 (14.3%)</td>
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<td>Primary Place of Employment</td>
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<td>Ambulatory surgicenter</td>
<td>8 (40.0%)</td>
<td>9 (45.5%)</td>
<td>3 (15.0%)</td>
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<tr>
<td>Hospital</td>
<td>48 (38.1%)</td>
<td>53 (42.1%)</td>
<td>3 (15.0%)</td>
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<tr>
<td>Other</td>
<td>3 (27.3%)</td>
<td>5 (45.5%)</td>
<td>3 (27.3%)</td>
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<tr>
<td>Practice Type</td>
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<tr>
<td>Independent</td>
<td>26 (54.2%)</td>
<td>13 (27.1%)</td>
<td>2 (22.2%)</td>
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<tr>
<td>Medical supervised</td>
<td>26 (29.5%)</td>
<td>18 (30%)</td>
<td>19 (21.6%)</td>
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<tr>
<td>Independent and supervised</td>
<td>7 (35.0%)</td>
<td>11 (55.0%)</td>
<td>2 (10.0%)</td>
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</tr>
<tr>
<td>Years as a CRNA</td>
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<td></td>
<td>.894</td>
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<tr>
<td>0-5 years</td>
<td>23 (32.9%)</td>
<td>32 (45.7%)</td>
<td>15 (21.4%)</td>
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<tr>
<td>6-15 years</td>
<td>28 (40.6%)</td>
<td>28 (40.6%)</td>
<td>13 (18.8%)</td>
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</tr>
<tr>
<td>16+ years</td>
<td>20 (46.5%)</td>
<td>16 (37.2%)</td>
<td>7 (16.3%)</td>
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<tr>
<td>Length of Primary Employment</td>
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<tr>
<td>0-5 years</td>
<td>23 (33.8%)</td>
<td>29 (42.6%)</td>
<td>16 (23.5%)</td>
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<tr>
<td>6-15 years</td>
<td>22 (44.9%)</td>
<td>16 (32.7%)</td>
<td>11 (22.4%)</td>
<td></td>
</tr>
<tr>
<td>16+ years</td>
<td>14 (50.0%)</td>
<td>12 (24.9%)</td>
<td>2 (7.1%)</td>
<td></td>
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</tbody>
</table>

*Note. ns = 150 to 157.*

*aOther educational categories were removed from analysis due to small sample size.*
Table 2

Qualitative Themes by Category Regarding Moral Distress

<table>
<thead>
<tr>
<th>Moral Distress Thematic Category</th>
<th>Medically Supervised Practice (n = 31)</th>
<th>Independent Practice (n = 34)</th>
<th>Category Responses by Total Participants (n = 65)</th>
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</thead>
<tbody>
<tr>
<td><strong>Patient Specific</strong></td>
<td></td>
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<tr>
<td>End-of-life surgeries/DNR</td>
<td>5 (16.1%)</td>
<td>9 (26.5%)</td>
<td>14 (21.5%)</td>
</tr>
<tr>
<td>Abortions</td>
<td>4 (12.9%)</td>
<td>6 (17.6%)</td>
<td>10 (15.4%)</td>
</tr>
<tr>
<td>Jehovah’s Witnesses and blood transfusions</td>
<td>1 (3.2%)</td>
<td>1 (2.9%)</td>
<td>2 (3.1%)</td>
</tr>
<tr>
<td><strong>Workplace Specific</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pressure to proceed with surgeries before adequate patient optimization</td>
<td>11 (35.5%)</td>
<td>11 (32.4%)</td>
<td>22 (33.8%)</td>
</tr>
<tr>
<td>Anesthesia plan issues</td>
<td>12 (38.8%)</td>
<td>6 (17.6%)</td>
<td>18 (27.7%)</td>
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<tr>
<td>Working with incompetent providers</td>
<td>5 (16.1%)</td>
<td>7 (20.6%)</td>
<td>12 (18.5%)</td>
</tr>
<tr>
<td>CRNA/MDA dynamics</td>
<td>3 (9.7%)</td>
<td>6 (17.6%)</td>
<td>9 (13.8%)</td>
</tr>
<tr>
<td>Lack of appropriate informed consent</td>
<td>3 (9.7%)</td>
<td>5 (14.7%)</td>
<td>8 (12.3%)</td>
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<tr>
<td><strong>Hospital/Political Specific</strong></td>
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<td></td>
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<tr>
<td>Fraudulent billing practices</td>
<td>2 (6.5%)</td>
<td>2 (5.9%)</td>
<td>4 (6.2%)</td>
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<tr>
<td>Covering up provider</td>
<td>3 (9.7%)</td>
<td>1 (2.9%)</td>
<td>4 (6.2%)</td>
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<tr>
<td>malpractice/incompetence</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare decisions based on patient’s ability to pay/insurance</td>
<td>-</td>
<td>3 (8.8%)</td>
<td>3 (4.6%)</td>
</tr>
<tr>
<td>Medical insurance deciding care</td>
<td>1 (3.2%)</td>
<td>1 (2.9%)</td>
<td>2 (3.1%)</td>
</tr>
<tr>
<td>Firing of employees due to political issues</td>
<td>-</td>
<td>2 (5.9%)</td>
<td>2 (3.1%)</td>
</tr>
<tr>
<td><strong>Support Systems</strong></td>
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</tr>
<tr>
<td>Lack of support from supervisors</td>
<td>-</td>
<td>1 (2.9%)</td>
<td>1 (1.5%)</td>
</tr>
<tr>
<td>Fear of retaliation/job loss for reporting medical errors</td>
<td>1 (3.2%)</td>
<td>-</td>
<td>1 (1.5%)</td>
</tr>
<tr>
<td><strong>No Moral Distress</strong></td>
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</tr>
<tr>
<td>No distress</td>
<td>4 (12.9%)</td>
<td>3 (8.8%)</td>
<td>7 (10.8%)</td>
</tr>
</tbody>
</table>

*Note.* Participants with undisclosed practices were removed from the analysis due to small sample size.
APPROVAL NOTICE
From the Institutional Review Board
California State University Fullerton

Date: August 19, 2013
From: Elaine Rulkowski, PhD, Vice-Chairperson
CSUF Institutional Review Board
To: Michael Demouchel
Department: Nursing, EC-190
Re: Use of Human Subjects in Research Project entitled: Moral distress among certified nurse anesthetists in independent practice versus medically supervised practice

The forms you submitted to this office regarding the use of human subjects in the above-referenced proposal have been reviewed by the Regulatory Compliance Coordinator and the Chair of the California State University Fullerton, Institutional Review Board (“CSUF IRB”). Your proposal is determined to be exempt per 45 CFR § 46.101(b)(2).

The CSUF IRB has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval notice does not replace any departmental or additional approvals which may be required.

If the above-referenced project has not been completed by August 18, 2014 you must request renewed approval for continuation of the proposal.

It is of utmost importance that you strictly adhere to the guidelines for human participation and that you follow the plan/methodology/procedures described in your research proposal. Any change in protocol or consent form procedure requires resubmission to the CSUF IRB for approval prior to implementation.

Additionally, the principal investigator must promptly report, in writing, any unanticipated or adverse events causing risks to research participants or others.

Please be advised that if you are seeking external funding for this proposal, the above-referenced title should match exactly with the title submitted to the funding sponsor. Any change in project title should be submitted to the CSUF IRB prior to implementation.

By copy of this notice, the chairman of your department (and/or co-investigator) is reminded that s/he is responsible for being informed concerning research projects involving human participants in the department, and should review all protocols of such investigations as often as needed to ensure that the project is being conducted in compliance with our institutional policies and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protections. The Assurance Number is FWA00013584.

Cc: Dr. Penny Weismler
Application No. HSR-13-0295
APPENDIX K

AUTHOR GUIDELINES FOR AANA JOURNAL

Information for Authors
The AANA Journal welcomes original manuscripts that are not under consideration by another journal. The article subjects must be pertinent to the specialty of anesthesia and those that relate to the broad professional domain of the practicing nurse anesthetist. Manuscripts published in the Journal become the sole property of the American Association of Nurse Anesthetists. All manuscripts should be submitted online to Editorial Manager at www.editorialmanager.com/aana.

Peer Review
Submitted articles undergo blind review by members of the AANA Journal reviewers. If accepted for publication, the manuscript will be edited using the AMA Manual of Style and to improve presentation without altering the meaning of the text. In most cases, edited copy will be submitted to authors for final approval. Authors are responsible for all statements made in their work including changes made by the copy editor.

Permissions
When employing material previously published, written permission from the original author and publisher is required for the printed, as well as the AANA website (electronic), version. Additionally, written permission is required for use of photographs of identifiable individuals.

Disclosure
Authors must disclose commercial associations that might pose a conflict of interest in connection with submitted work. Such associations include consultancies, speaking on behalf of a vendor, equity interests, or patent licensing arrangements. Such disclosure will be noted on the published article.

Manuscript Preparation
To avoid delays in the review process, manuscripts should be carefully prepared according to these guidelines and proofread thoroughly for errors in grammar and spelling. The manuscript should be read for clarity and accuracy by colleagues and/or mentors before submission to the Journal. Write simply and clearly, avoiding jargon and unfamiliar abbreviations; spell out all acronyms at first mention. Manuscripts should be set in 12-point type and not exceed 20 double-spaced pages, including references, figures, and tables. Number the pages from the first page of the text to the end of the references. Authors are invited to submit articles in the following categories and formats described below:

- **Research** – A report of an original investigation. The article should include a title page (including primary author information, short biographical statements and, if needed, an acknowledgments section), abstract (200 words maximum), 3 to 5 keywords, text (subdivided into Introduction, Materials and Methods, Results, and Discussion), and references. If applicable, figures (with legends) and tables should be provided.
Manuscripts describing investigations carried out in humans or animals must include a statement indicating that the study was approved by the authors’ institutional investigation committee and that written permission was obtained from human subjects.

- **Survey/Review** – Collates, describes, and critically evaluates previously published material to aid in evaluating new concepts. The article should include a title page (including primary author information, short biographical statements, and an optional acknowledgments section), abstract (200 words maximum), 3 to 5 keywords, text (subdivided into Introduction, History and Review of Literature, Discussion of State of the Art, and Summary), and references. If applicable, figures (with legends) and tables should be provided.

- **Case Report** – A report of a clinical case that is uncommon or of exceptional educational value. This category may constitute a brief description of a clinical episode or an in-depth case presentation. The authors must have been personally associated with the case. The article should include a title page (including primary author information, short biographical statements, and an optional acknowledgment section), abstract (200 words maximum), 3 to 5 keywords, text (subdivided into Introduction, Case Summary, and Discussion), and references. If applicable, figures (with legends) and tables should be provided.

- **Letters to the Editor** – Include brief constructive comments concerning previously published articles or brief notations of general interest. Length should not exceed 350 words. Abstract and keywords are not needed.

**References**

A maximum of 50 references (only those sources cited in the text) are allowed. Cite references in the numerical order that they appear in the text. References cited in the article should be of previously published articles or texts. Cite written or oral personal communications in parentheses in the text. Carefully validate all references to ensure that they are cited accurately, completely, and in the style indicated above. Cite up to 6 authors. If there are more than 6, cite the first 3 only and add “et al.” Consult *AMA Manual of Style*, 10th edition, for complete rules on references. Here are a few examples:

**Journal**


**Book Chapter**

Website

Internet references should be kept to a minimum, and those cited must be from established, peer-reviewed sources with stable archived information. In rare instances when non-peer-reviewed Internet sources need to be referenced, websites of long-standing, national stature, such as the Malignant Hyperthermia Association of the United States or the National Patient Safety Foundation, may be appropriate.

Required Format
• Title Page – Submitted as a separate file, include manuscript title, authors’ names and credentials, professional position, current employer, city, and state or country. Furnish a correspondence address, email address, telephone number, fax number, source of grant or financial support, and an acknowledgment section, if needed. Author identification should appear only on the title page of the manuscript.

• Author Information – A short biographical sketch of each coauthor, with principal author indicated, must accompany the title page of the manuscript. Please include an email address that can be published for the principal author. Example: James R. Johnson, CRNA, PhD, is program director of ABC School of Anesthesia, Mountain View, Montana. Email: jrjohnson@mountainview.com.

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• Figure Legends – A legend should be provided for each figure.

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Checklist

1. Cover letter of submission (optional)
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